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MODERN CYCLE

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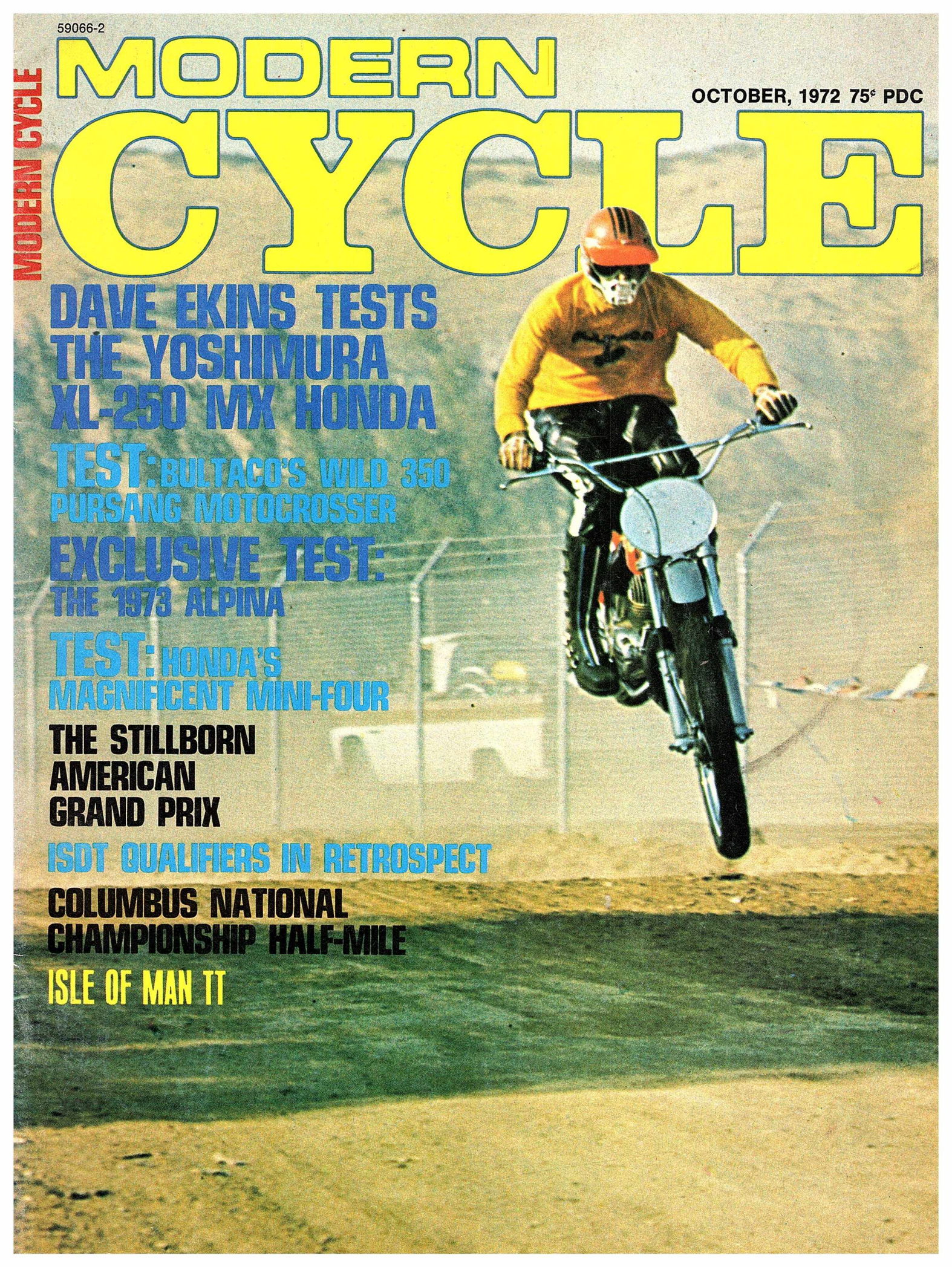

DAVE EKINS TESTS THE YOSHIMURA XL-250 MX HONDA

TEST: BULTACO'S WILD 350 PURSANG MOTOCROSSER

EXCLUSIVE TEST: THE 1973 ALPINA

TEST: HONDA'S MAGNIFICENT MINI-FOUR

THE STILLBORN AMERICAN GRAND PRIX

ISDT QUALIFIERS IN RETROSPECT

COLUMBUS NATIONAL CHAMPIONSHIP HALF-MILE

ISLE OF MAN TT

If you love your motorcycle,

think purple for a change.

You and your machine are very close. You ride together, you take care of each other. You can tune it, tweek it, knock it down and put it back together if you want. It's fun, thrills, and you've made an investment, and the best way to protect it is with Royal Triton Cycle Oil. Royal Triton contains effective additives to resist friction, is race quality and specifically designed for air cooled aluminum engines.

Make sure your motorcycle's life blood is purple and you'll get royal performance.

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AVAILABLE FOR 2 OR 4 CYCLE ENGINES.

TRICK CHASSIS ARE IN P44

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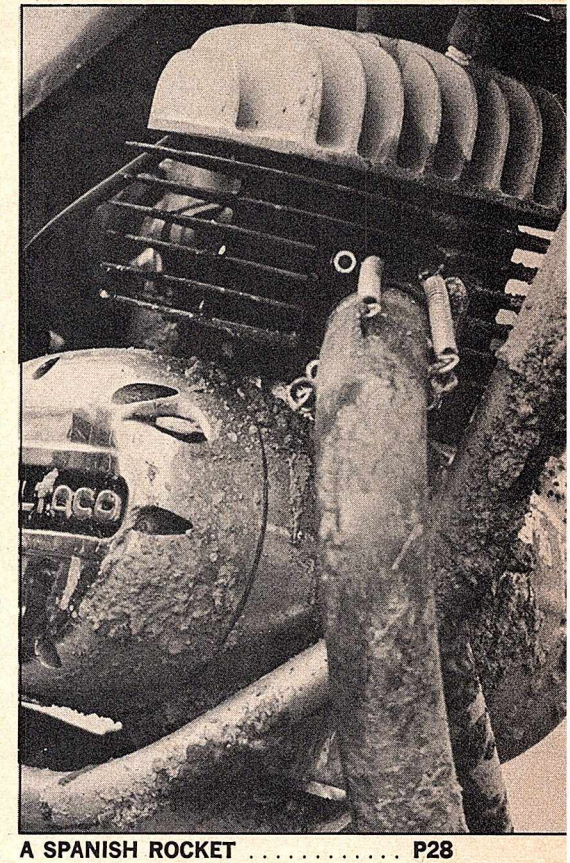
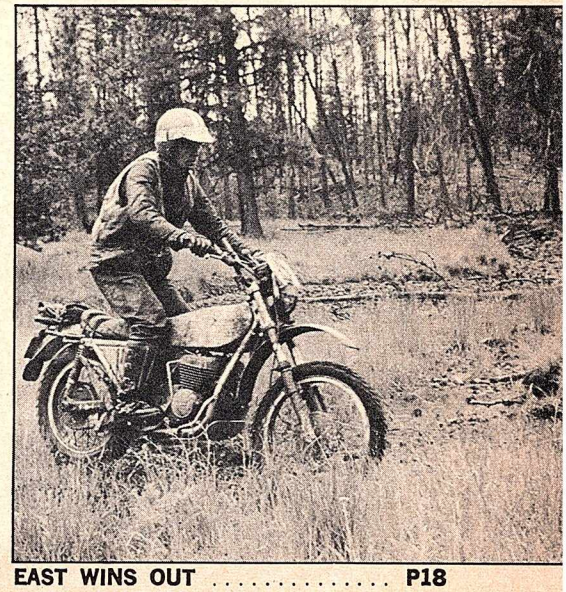
VOL. 8, NO. 10

THUMPER POWER P59



A SPANISH ROCKET P28



EAST WINS OUT P18

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MIC
MOTORCYCLE INDUSTRY COUNCIL, INC.

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A BLAST FROM THE PUBLISHER

WHAT'S HAPPENING?

The Saturday Evening Post, with its Norman Rockwell art work and appeal-to-all format, was a true American magazine that, for many reasons, became a financial disaster. As a kid I loved reading the jokes and thumbing through some of their fine pictures. It is now a quarterly, what used to be a mighty weekly is now produced four times a year.

The Summer issue has a joke that suggests a whole lot more than the face value of just another cartoon joke. It is, quite possibly, the reason *The Saturday Evening Post* tumbled as will many, many more once enterprising businesses. Two politicians complete with briefcases are walking from the Capitol building. One says to the other, "Boy, I'm sure glad I don't have to run a business with all the laws we just passed."

For the third time we in California defeated the mandatory helmet bill. We are those who took time out to circulate petitions, write letters, and make phone calls. But these clowns in our Capitol will sure enough bring up a similar helmet bill again because they think they're doing us a favor, or maybe it's mankind. They don't ride motorcycles, so what do they care? Kind of like mandatory busing; how many of those law makers have children in public schools? Telling people to do something is easy, going out and doing it yourself is something else!

A mandatory headlight law that will come into effect in 1975 is a classic example of sneaking it by the unknowing biker. Of course, they didn't tell anybody about it, so we got it.

The Motorcycle Industry Council, whom we run free ads for, has set up an office in Washington to combat anti-motorcycle legislation. If they're doing any kind of a job it's better than what we had before—nothing. It seems the motorcycle industry has visions of a legislative blanket being thrown over their profitable and growing businesses, and they've got to do something about it. Bitter enemies must now join forces to fight a common foe, which happens to be legislation spurred on by the Sierra Club, environmentalists, and other so-called do-gooders. I think it is pretty clear to all of us who enjoy motorcycling that we've got to pull together and fight for what we have left before we lose that, too!

CAN YOU BELIEVE THIS?

Editor's comment to Mr. Krol:

Once in a great while we receive a letter such as yours. It is a very poor attempt of your trying to convince someone that you might know a thing or two. In reading your letter that wanders clear out of context and leaves the burdened reader with boredom and a case of the giggles, we find we cannot reprint the thing in its entirety. However, the paragraphs that do pertain to the thought you are trying to get across we will relay to our readers. Really, a fifteen hundred word letter is a little ridiculous for anyone to reprint. —Ed.

Dear Mr. Karrel:

First, in the July issue, on page 53, what, what, what is that camera over the guy's shoulder?

Second, in your column on persecution of motorcyclists by government you make the mistake that is so common, so widespread, so typical, that it might be called the Grand Delusion of Americans: you propose to "solve" the "problem" by making expansion chambers unobtainable . . . which can only mean, illegal. This let's-make-a-law mentality is precisely the cause *of substantially all social problems, hardly their cure, for government coercion invariably results in exacerbating the very unpleasantness it was advertised to meliorate, plus adding numerous new forms of misery to the burdens of the public and the individual.*

As a systems engineer I automatically think in terms of dynamic systems and, after years of practice in this art, I find my sensibilities repeatedly violated by the unfortunate fact that such a style, if you like, of thinking is alien to almost everybody else. Evidently, it is alien to you. When you look at the matter of noise and complaints, and law and law enforcement, and motorcycles and motorcyclists, and motorcycle dealers, you seem to perceive many elements of a system, but you do not seem to perceive that all these elements are bound together, and function together, as components of a single overall system.

Again, the point is not that I stumbled onto this idea as some kind of divine inspiration, but rather that this idea is one specific consequence of a process of analysis that gets far closer to reality that the superficial treatments so favored by editorialists.

Enough of political theory and, third, I note that Modern Cycle *is still as full of technical blunders as when I let my subscription lapse over a year ago—the July, 1972 issue being the first one I've read in that time. You can print all the letters you want from 14 year-old beginners who think* Modern Cycle *is the neatest thing they've discovered since masturbation, but that doesn't change the fact that the July issue contains at least a couple dozen flat-out blunders . . . perfect balderdash and misinformation . . . outrageous nonsense that could never have been written by anybody who had the slightest notion about what he was talking.*

Very truly yours,
J. G. Krol
Anaheim, California

You'll find our position on noise is quite valid. Motorcycles do not have to be noisy to perform. The finest example of this falls within the International Six Days Trial where all machines must run under strict regulations. The bikes are sound tested daily, and the only performance factor that they suffer is that of hauling a muffling device within their exhaust system. Expansion chambers are a bolt-on item that make a whole lot of noise, and, unfortunately, that particular noise is the irritating, ear splitting kind that people don't really take a liking to. (I personally dig unmuffled four-strokes.)

But noise makers are readily sold because the purchaser can go about rattling windows and make himself feel like a great big racer. Industry,

Text continued on page 82

THE GREENHORN.

500 OF THE TOUGHEST MILES ON EARTH

The Greenhorn National Championship Enduro, May 28/29, 1972: Two days, 500 miles, 6000ft mountains, 100 degree desert heat, 80mph dirt roads, walking-pace, rock-strewn sandwashes.

1st Overall	Bob Steffan	Bultaco
2nd Overall	Dave Ekins	Bultaco
1st Open Expert	Bob Steffan	Bultaco
1st 250cc Expert	Dave Ekins	Bultaco
Father & Son Team	Dave and Greg Ekins	Bultaco

FLASH!!! National 125 Mile Red Garter Enduro. Cuyama, California.
July 2nd, 1972. First overall: Bob Steffan (Bultaco 360).
Team Prize: Bultaco (Bob Steffan, Dave Ekins, Tom Patton)

BULTACO

1972 Cappra 125 MX.

Dependable motocross performance.

Electronic ignition. More horsepower. Same gear box as our engine with twice the displacement.
Tough!

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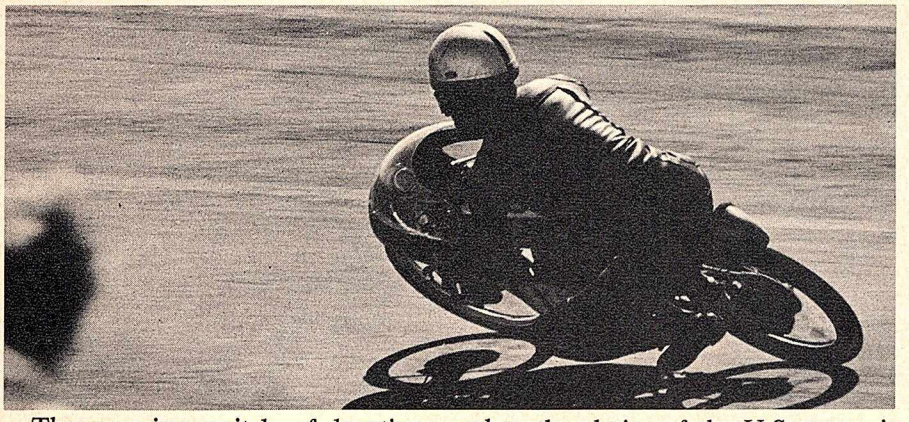
EUROPE



The amazing switch of locations for the International Six Days Trial in 1973—a first time ever U.S. promotion—from the Fort Hood, Texas, Army base to the Berkshire, Massachusetts, area came as a big surprise after the enormous backing which the Fort Hood operation was promised by the Army authorities. These were listed as 1,000 soldiers acting as marshals, helicopter rescue and medical services, free meals and accommodations for riders and officials, language translators services, and there was even talk of air flighting contestants from Europe in Army air transports. Even the Russians and pre-war German Army supported efforts for the Six Days never offered so much. The only reason given for the switch was the lack of difficult enough terrain for the European Experts, and yet on first announcement of the Fort Hood 340-mile area of trials operation, ISDT veteran John Penton had said that every type of going from woods, rocks, rivers, mud, sand, and steep climbs and descents were all in the making of a rough and tough course which would extract marks from even the top aces. So after Fort Hood had been chosen from six locations offered and now rejected, one has the feeling that motorcycle politics has entered the fray. With the chosen "battleground" now established as the scene of the annual Berkshire Two Day Trial (America's oldest ISDT type of event), it is being whispered that the choice of U.S. official Trophy and Vase Teams will be selected from successful Berkshire contestants on the score of local knowledge of the ground likely to be used. The truth in these assertions may well be seen when the choice of the U.S. teams is announced for the forthcoming 1972 Six Days when any Golds gained may point to automatic choice for the home based 1973 trial. One can thus expect some vitriolic letters from disgruntled West Coast non-runners. Already some European mauufacturers have been approached by skilled American riders offering their services—behind which is the hope that manufacturers will be sure of having their official entries accepted.

Just announced is the composition of the British 1972 ISDT Trophy Team which comprises of Mick Andrews, 1970 '71 & '72 Scottish Six Days winner; Gordon Farley, 1971 British Trials Champion; Malcolm Rathmell, runnèr-up in these events; Jim Sandiford, Bultaco works rider; John Pease, a former Greeves works runner; and a very much underrated rider, Arthur Browning, best British performer in 1971.

Choice of machinery lies in Ossa, Montesa, Bultaco, and one 501cc Cheney- Triumph. Who will ride this big banger is not announced, but the obvious choice lies between Arthur Browning, who favors the big one, or John Pease, who has successfully used the device before in scooping up a Gold medal. And to win a Gold, no marks on time or observation of machine breakages must be lost. The Bultacos will not be the Sherpa trial models which are regarded more as one-day trials bog-wheelers, but specially prepared Metrallas; the examples used in the Welsh Two Day had all enclosed rear chains a la MZ.

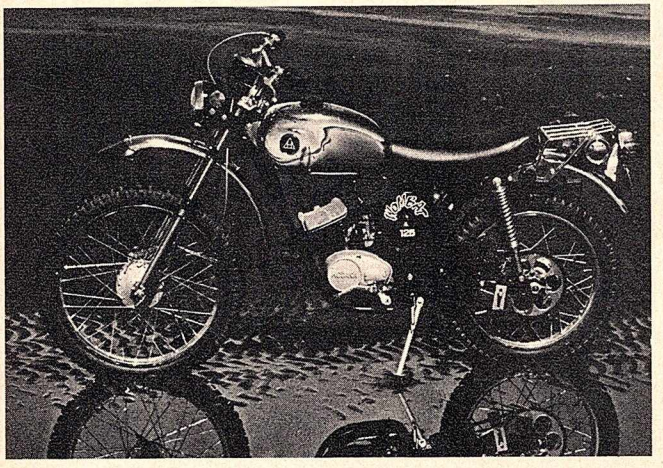
Seen on not so secret tests is a new BSA Victor 500cc twin cylinder, but this "new" engine is, after all, not so new as we have seen it housed in the T100 Triumph. This effort is aimed at the U.S. market and, in addition to its appeal for desert operations, may well slot in as a 1973 Six Days tool.

Every year the post Isle of Man TT inquest fills the columns of the motorcycling press. This year Italian Gilberto Parlotti was killed on the 37-mile-per-lap circuit becoming the 99th rider to die on the island course since the races were first run in 1908. Scare headlines—"Who will be number 100 to die?" This year strong support for removing the TT race series from the World Championship comes from such notables as Agostini, Phil Reed, 250 World Champion, and even the president of the FIM Sports Committee voiced that many of his committee have no sympathy for the I.O.M. course. The acknowledged factor is the 37-plus miles per lap on roads normally open to public traffic. With the innumerable twists, turns, corners, climbs and descents it is a very difficult course to learn in the limited practice periods allowed—added to which is the weather hazards playing a part. More "noise" is being made over the casualties and danger for the 1972 races than in 1970 when six unfortunates lost their lives. This year's Wednesday race had to be postponed a day due to mist on the mountain part of the course and wretched conditions. Ironically this involved another delay —making two days—of funerals in the local cemetery which is situated behind the finishing straight. Certain works riders have stated that they will insist that the TT races be deleted from their 1973 racing schedules.

Ex-BSA works runner Vic Allan, who was side-lined due to serious injury in the 1971 Italian motocross GP, is rapidly returning to form. Now a Bultaco runner, he had left his bike in Belgium whilst he made a quick trip home, so when the following Belgium moto was cancelled he was minus his bike for a fill-in British event. He was lucky to be able to loan one of the old works 500 BSA Victors and on it scored his best results to date. A fellow ex-BSA teamster, Andy Robertson, is really flying on his 400 Husqvarna and is so dedicated to motocross that he deserves success. BSA Number One John Banks, who switched to CZ, has not as yet hit the headlines and in the

Text continued on page 66

Why is the most valued component a part of Hodaka you don't get to see?



HODAKA 125 WOMBAT

What is that thing the Hodaka people have been working with for nine years?

It's something we're very proud of. We've used it as a blueprint for everything we've designed in our never-ending work toward perfection in the motorcycle industry. It is **our philosophy** of producing uncompromised quality. You can't see it, but you can see what it breeds . . . Hodakability!

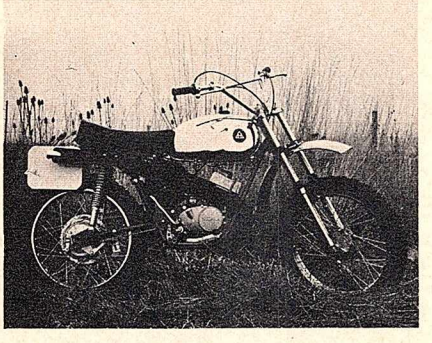
There must be, however, a well thought out balance between quality material and high cost components. We realize that the net result . . . a complete Hodaka . . . must still be a machine with a price tag the average enthusiast can afford. That's why you'll see Hodaka embodies an overall feeling of functionally rugged, yet simple, no-nonsense construction.

From the sturdy, plated steel front fender to the unsurpassed, fully adjustable rear shocks, you see our depth of thought. We consider the rider and honor his investment. Not what's cheapest or most expedient, but what's best to get the maximum performance from Hodaka . . . for you.

You'll often find yourself examining a classic auto, and commenting "Boy! They sure knew how to build 'em." The fact is that the "know-how" wasn't any better, it's just that they weren't spreading their efforts over a raft of models, and they could concentrate on one machine. It was their pride-object. Hodaka is ours.

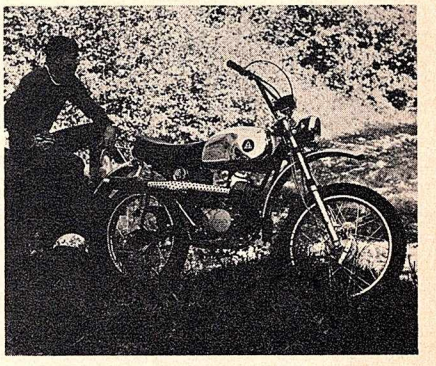
Examine Hodaka carefully. It can stand up to scrutiny. Notice the lack of what might be termed "unnecessary garbage". Hodaka is strong, clean and functional. If a component needs redesigning, we don't wait for the "annual model change" . . . we do it now. Sure, plastic is cheaper than steel . . . and you'd be thrown out of a Research and Development building on your gluteus maximus, too.

If there was a stronger, smoother five-speed gearbox than ours, we'd have it integral with our



HODAKA 100 SUPER RAT

Hodaka engine. Take a look at a painted tank after a day of hard riding in the mud, sand or whatever . . . and you'll realize why Hodaka boasts a chromed steel tank. Why did we design Hodaka with its steel, twin tube frame nine years ago? Ask Yamaha or Honda. What you get is what you see . . . plus our way of doing it . . . our philosophy. You get your money's worth.



HODAKA 100 B+

For a deeper understanding of this great motorcycle, send for a copy of our booklet "The Hodaka Story" Include your name, address, and zip code, along with 25 cents to PABATCO, 1072 Upper Sherman Road, Athena, Oregon 97813. We'll also send you the address of your nearest Hodaka dealer. Canadian readers should write to Gemini Ind. Ltd., 2525 Stephens St., Vancouver, B. C. Australian inquiries can be sent to Minilya Pty., Ltd., P. O. Box 209, S. Melbourne, Australia 3205. Hodaka is designed and imported by PABATCO, Athena, Oregon 97813.

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5164 Metal Flake....4.95

CHOPPER WW I
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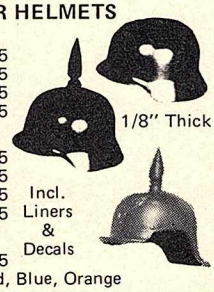
Candy & Flake – Red, Blue, Orange



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MAIL

Dear Sir:

In the June, 1972 review of *Modern Cycle* you have on page 40, the "Starship" body designed for the Honda 750. I am interested and so are a few of my friends in this body. I wonder if it could be possible for you to send me information on how to obtain this body.

Bernard Boisseau
Baie Comeau, Sag.
Quebec

All of the beautifully painted "bodies" featured in the "'Glass Customs" article came from The Fiberglas Works, 2600 Soquel Avenue, Santa Cruz, California 95060, (408) 475-3114.—Ed.

Gentlemen:

In your June, 1972 issue you ran an article on Dunecycles. I am interested and if possible wish to purchase one, as there are none of this kind on the East Coast.

Please send any catalogs you may have or the address where I can send for the catalogs.

Charles Butera
Howard Beach, N. Y.

The Dunecycles are distributed by A.P.E. Products, 13727 Excelsior Drive, Santa Fe Springs, California 90670, (213) 921-2585. By the way, dealer inquiries are invited.—Ed.

Dear Sirs:

I have kept an eye open for advertisements for motorcycle mechanic schools and have been unsuccessful. I was wondering if you know of any in the United States, if so, could you please send me the addresses of them so I could write them? If not, who could I get a hold of to get the information I'm seeking? I appreciate you taking the time and effort to help me.

Rick Krigbaum
Redwood City, Calif.

Boy, this is your lucky day! We just received a release pertaining to Standard Technical Institute of Motorcycle Technology, plus a curriculum outline. If you're really interested in becoming a motorcycle mechanic, or possibly open your own shop, I'd check into this. Information pertaining to cost, schedules, and entrance requirements may be obtained by writing to: Standard Technical Institute, National Admission Office, 6399 Middleshire St., Columbus, Ohio 43229, or Standard Technical Institute, Mid-West Training Center, 1622 Wyandott St., Kansas City, Missouri 64108.—Ed.

Dear Sirs:

I was wondering if you had recently done a test report on the 1972 Yamaha 650cc or if you plan on doing one in the future. I have recently become very interested in this bike and would like to know more about it. I would really appreciate an answer to this as I can really use the information.

While I'm at it, I want to tell you that you have a great magazine!

Geoff Oldfather
Benson, Arizona

Yes, in the March, 1972 issue we did a test on the Yamaha 650cc XS-2. Back issues are available by sending 75¢ to Challenge Publications, 7950 Deering Avenue, Canoga Park, Calif. 91304.—Ed.

Gentlemen:

In your June, 1972 issue you wrote a "test report" on the 125cc

(Text continued on page 26)

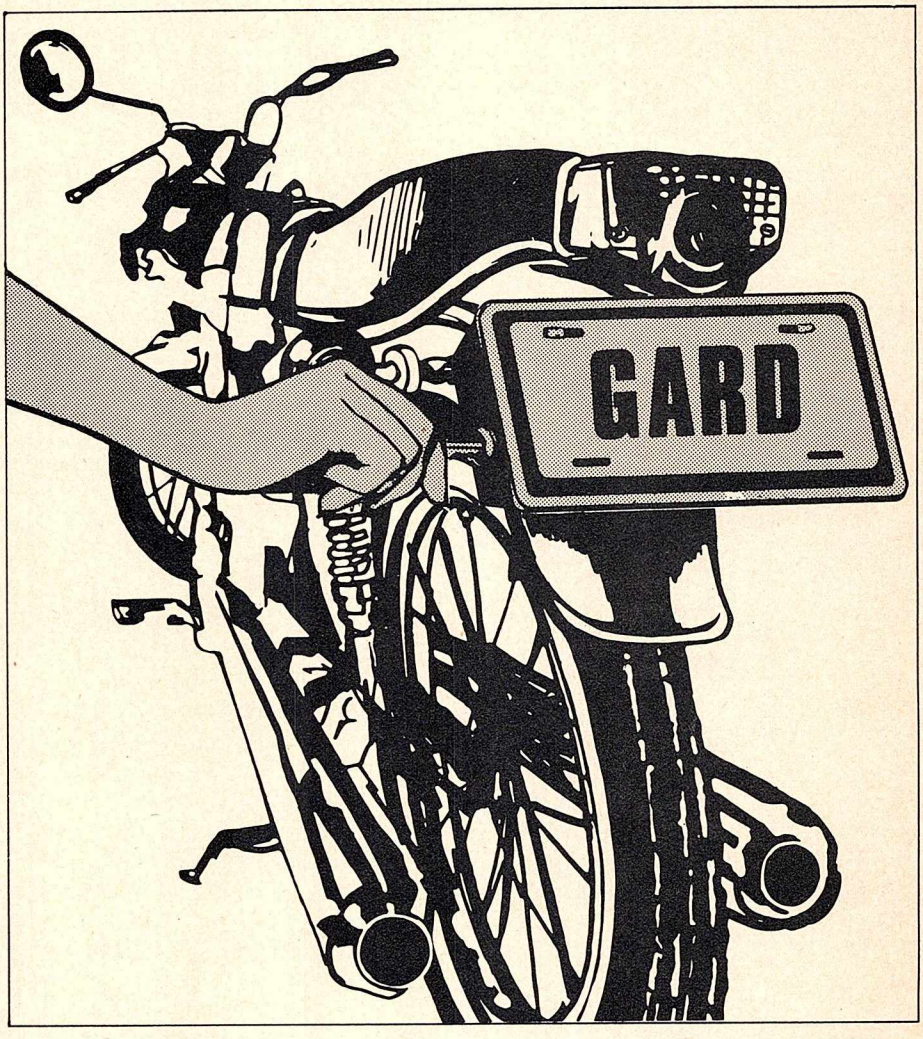
Motorcycle Theft On Increase

MORE THAN 400 CYCLES STOLEN EVERY DAY

Motorcycle theft, always a problem, is increasing rapidly. Industry stasistics show that almost 140,000 cycles were stolen last year and expectations are that an average of more than 400 cycles per day will be stolen in 1972.

Unfortunately, the recovery rate on stolen cycles is almost nil. Cycle thieves are seldom sought and almost never caught. Yes, most cycles are insured against theft, but owners never get back anywhere near what they paid for their cycles. Further, they have to wait 30 to 60 days for any settlement at all and the season is half over before they can get a new bike. To make matters worse, most cycles are stolen within the first 120 days and the bigger the cycle, the more likely it is to be stolen.

To combat theft, many cycle owners buy heavy chains. But chains are so inconvenient they are often left at home. And chains can easily be defeated by prepared thieves.



CYCLE-GARD PROVIDES EXCELLENT PROTECTION

People often say that if a professional thief really wants your cycle nothing can stop him. Fortunately this is no longer true. The new Cycle-Gard, made by Alcotronics is an effective deterrent, even for the pro. Cycle-Gard 2 sounds an ear-splitting alarm the instant anyone touches your cycle. At the same time, it notifies you of the danger via an alarm signal on a tiny receiver you carry in your pocket wherever you go. This electronic surveillance system keeps you in constant communication with your cycle.

Cycle-Gards are virtually impossible to defeat. There is no way to remove the Gard without the key, which only you carry. The lock is pick resistant. The case is made of Cycolac T. This space-age material is much stronger than steel. Used on the nose cones of space vehicles and for timber splitting wedges, it can withstand tremendous impact.

Cycle-Gard is made with an elaborate baffle system which makes it impossible to dampen the sound with whipped cream or short it out with salt water. It is actually a dual alarm system with two separate motion sensing silicon activated mercury switches, separate long-life batteries and separate alarms, for extra safety.

If the Cycle-Gard is attacked with an axe, crowbar, screwdriver or pliers, it goes off instantly. The sound of an alarm panics amateurs. Pros are cooler, but no thief wants to go riding through the streets with an alarm blasting. The pro simply abandons the protected cycle and looks for easier pickings. The FBI reports that alarms are effective in thwarting nine out of ten robbery attempts.

Statistics prove that Cycle-Gard really works. Less than one hundredth of one percent of cycle-Gard protected cycles have been reported stolen, compared with over 20% anticipated by insurance companies for unprotected cycles. Cycle-Gard is so effective it will probably qualify you for a reduction in insurance premiums. For more information, visit your dealer or write:

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UP ON THE PEGS

The International Six Days Trial is a very dear thing to me, it has taken me from overwhelming joy to the deepest hollows of despair, dreams captured and those that were shattered. The ISDT is not an easy contest, it is long, gruelling, difficult, and demanding. It takes a special man and special equipment to be successful in this, the greatest motorcycle contest in the world.

A MANY SIDED SPHINX

I was a member of the first U.S. Silver Vase Team in '64 and competed in five Internationals through 1970. As a private entry on a 500 Triumph in '63, I won a Gold medal, and then in '66, riding a works 125 Zundapp with full factory support, I picked up another Gold. Despair caught me and over 200 others in '65 when rain and fog combined with mud, slop, and bogs excluded 70% of us by the 3rd day. I have been at both ends of the ISDT spectrum and benefitted from it.

During the last Daytona Speed Week, the AMA had a breakfast for the motorcycle news media. For the first time I met Russ March and Mike Vancil. It was Vancil's show as the main subject of that meeting was to announce the site of the 1973 ISDT. Vancil is the director of AMA Amateur Activities and this decision was up to him. An old friend of mine attended who isn't a member of the AMA top echelon nor a member of the press . . . John Penton.

John was there to give merit to Vancil's decision as to the selection of the site for the '73 ISDT. Vancil introduced John as an expert in ISDTs (he has ridden several). John took the microphone and told us about the superb terrain Fort Hood had to offer, plus all the benefits of running this show with the assistance of the U.S. Army. He also made it very clear that Berkshire was a bad place to have the ISDT because it wears out motorcycles, and he didn't see how any machine would last the six days. (Berkshire, having the distinction of being the only event in the U.S. that is run on ISDT-type rules, was an early favorite especially since the Penton family dominates the event.) John further spoke of the hills, rivers, and mud sections, the possibility of alternate courses if the rivers became impassable, the fine motocross course built by the Fort Hood Dirt Riders, and of a paved road race course in the planning. The news media was sold.

A few months have passed and it seems the Fort Hood idea has been abandoned. Recently Don Woods, AMA director of Competition, Russ March, and Al Ames, the man responsible for the Berkshire, took a trip to Fort Hood. After spending some time there they decided, "The available terrain at Fort Hood is not sufficiently difficult." The communique I received from the AMA states, "Woods personally directed layout operations, employing the services of several riders with ISDT experience in England and Europe." Before this letter came from the AMA, I had a phone call from Mr. Braun, public relations man for Fort Hood. He told me only Al Ames, Don Woods and Russ March came to check the Fort Hood area out, he was also very upset about the cancellation as were the Fort Hood Dirt Riders and a whole lot of other people who are involved in this thing.

In retrospect, two of the ISDTs I have ridden were put on by the Army, they were hosted professionally and ran the smoothest. The Swedish ISDT was the most monotonous as the central area of Sweden is as flat as a pancake, and for the hillclimb special test they used a man-made mountain that rose nearly 1,000 feet. 1968 was held near the top of Italy in an area of rocks stacked upon each other until they formed mountains. This was a tough event resulting in many retire-

(Text continued on page 16)

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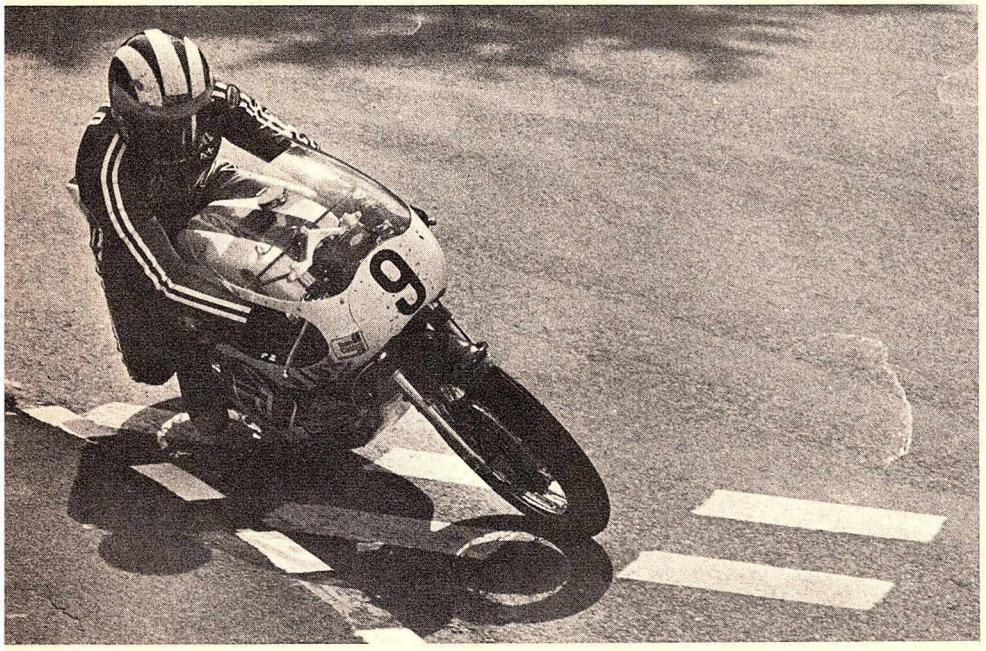
ISLE OF

A MANX CAT WITH ITS TAIL UP?

Daytona, Ontario, Talladega, Imola and a host of other top International road races have really been in the limelight in the past few years, but none of them can compare with the Isle of Man TT races when it comes to pure tradition. The prize money is paltry compared to some races and the inconvenience of two weeks at the circuit is enough to turn some of the world's best racers off, but the fact remains that the Isle of Man has more than just the title of another race going for it . . . simply being the Isle of Man conjures up images of racers streaking through country lanes at 150 mph and this alone is enough for any road race enthusiast. A record number of spectators were on hand this year for the latest running of the classic and except for a bout of rainy weather, the racing was first class.

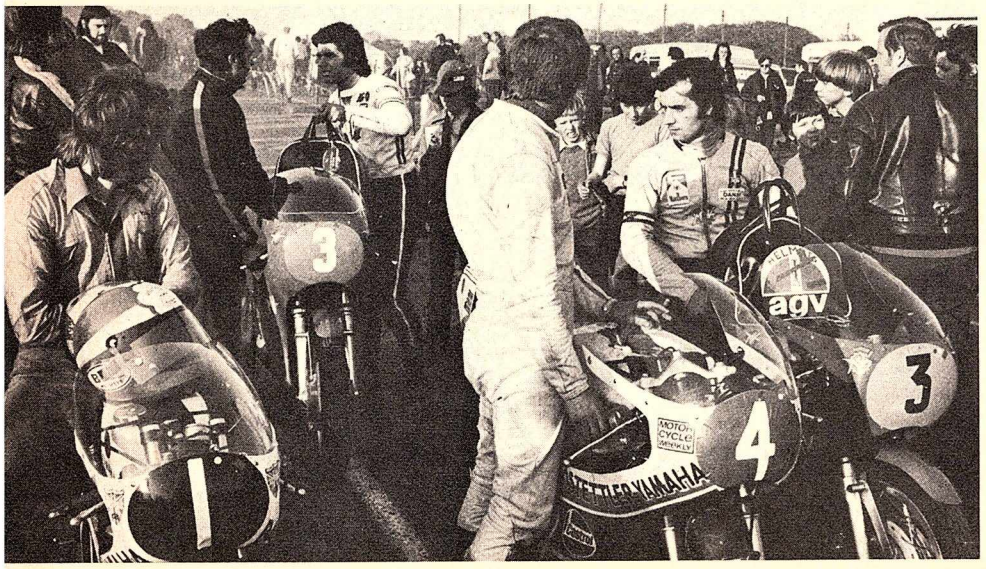
Giacomo Agostini grabbed his expected wins in the 350 and 500cc races on his legendary MV Agustas while Ray Pickrell topped the two 750 races, Formula 750 and Production, on his Triumph threes. Phil Reed proved his mastery of the tricky 37½-mile mountain circuit by winning the 250 race with apparent ease while Charles Mortimer also repeated his win of last year in the 125cc event on his works water-cooled Yamaha. Both the 500 and 750 sidecar events were captured by West German Siegfried Schauzu, but race week itself was marred by the tragic death of Italian ace Gilberto Parlotti. The works Morbidelli rider came off while leading the 125 event in a driving rain storm and was killed instantly.



Phil Read grabbed the 250 win for the second year in succession on his private Yamaha twin.

Parlotti's death is the ninety-ninth in Isle of Man history and many of the top names, including Giacomo Agostini and Phil Read, have voiced their displeasure about the safety aspects of the torturous mountain circuit. The future of the Isle of Man races as we know them depends on how much improvement is made over the winter, for without the likes of Read, Gould and Agostini, the TT races would be buried in history.

Race week got under way with the Saturday production bash and right from the start, Ray Pickrell asserted his mastery of the course and his Triumph Trident shot into an immediate lead. The main challenge to the Triumph camp was expected to come from the newly reformed John Player Norton team. Tony Jeffries was called in by team manager Frank Perris to back up Number One rider Peter Williams, but before these



As Rod Gould (4), warms up his works Yamaha, Alberto Pagani (right), and Giacomo Agostini get ready for practice on their MV Agustas.

MAN TT

two could make a dent on the fast disappearing Pickrell, gearbox problems set in. Jeffries, who had switched from the Triumph team just for this race, was forced out but Williams continued to finish a distant second . . . without the use of third gear.

Stan Woods headed the 500cc category on his Suzuki twin but his lead was in doubt until the very last seconds of the race. Roger Bowler, on a neat Triumph twin, was never out of earshot and finished a mere seven seconds behind after four laps of the 37½-mile course. John Williams, no relation to the Norton Development Engineer, grabbed the 250 honors on a Honda CB250 and he was the only production winner not to set a new record. Pickrell averaged exactly 100 mph for the race with a new lap record of 101.61, and Woods set a blistering pace of just over 92 mph for the half-liter division.

Phil Read buttons up his Premier helmet before the start of his victorious 250 ride.

The three-wheelers took to the track Saturday evening after the production race and, although the 750cc three-wheel event doesn't count for World Championship points, most of the top names were on hand as a prelude to the 500cc Championship class later in the week. When all was said and done, Siegfried Schauzu was the man to beat, but no one did. 'Sideways Sid' shot into an immediate lead and by the end of the three lap event, he had almost a three minute lead on runner-up Alan Sansum.

Schauzu was mounted on an overbored 500cc BMW Rennsport with an actual displacement of 560ccs. The only man who had any chance of keeping Schauzu in sight was fellow West German and ex-World Champ, Klaus Enders (BMW). However, Enders' bid lasted only fifteen miles and once his ignition packed up, the way was clear for Schauzu and passenger Wolfgang Kalauch to cruise home to victory, despite a first lap stop to put on a new pair of goggles. The German pair averaged a record shattering 90.97 mph and this was the sixth time that Schauzu has won a three-wheel event in the Isle of Man. He has topped the 500cc class three times and this win evens his score in the big class.

If Schauzu's win in the big-bore division was a clear-cut decision, then Monday's 500cc World Championship class showed that the likeable German is just as quick under pressure. Sideways Sid grabbed his seventh sidecar win over Heinz Luthringhauser but the time between them after three gruelling laps was just seven seconds. In fact, with the riders racing under the corrected time system with ten second interval starts, Schauzu and Kalauch didn't even know that they had won, and on arrival at the finisher's enclosure, they were quick to ask . . . "Who won?" Their con-

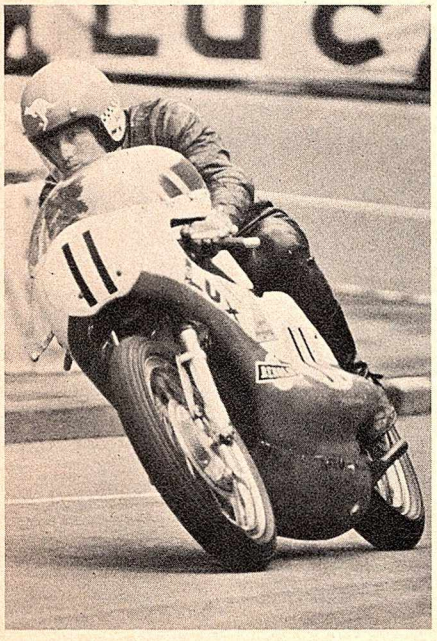
With last year's 350 winner Tony Jeffries as an unwilling spectator due to a seized Yamaha, riders streak by the pub at Ballacraine.

cern wasn't for the BMW of Luthringhauser but the similar machine of Klaus Enders. The ex-Champ was leading the race until the last lap when forced out near the Ramsey hairpin. Schauzu was trailing the ultra-low monococque outfit of Enders by a mere fifteen seconds as they started the last tour, so when bad luck befell Enders, Schauzu was handed the win with just seven seconds to spare over teammate Luthringhauser.

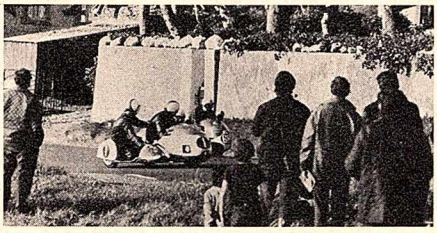
Third place went to the rather unusual machine of Gerry Boret. The wedge shape fairing conceals a Konig power unit . . . pirated from the outboard motor world. The four-cylinder, water-cooled two-stroke has the power, and Boret's third place is a fantastic performance for a first time effort. Perhaps this could be the writing on the wall for the all-conquering flat twin BMWs that have been ruling the roost for the past fifteen years?

A quick rain shower after the three-wheel race and just prior to the 350cc afternoon event made conditions tricky for the Junior but the damp patches didn't seem to affect Giacomo Agostini (MV Agusta), as he romped home to his ninth Isle of Man TT victory at an average speed of 102.03 mph. Having recently been signed by the MV team, Phil Read was running second until gearbox troubles sent him to the sidelines, but the battle that developed for second made the race one of the best of race week.

Jack Findlay was third fastest in practice for the 500cc class on his home brewed Jada. The engine is based on a 500cc Suzuki twin, converted to water-cooling.



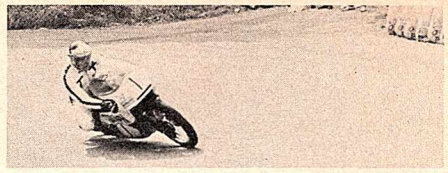
Agostini before the start of his tenth TT win in jovial spirits.



As spectators line the circuit, the Wegener/Heindrichs BMW outfit flies by the similar machine of Dickenson/Cooper. The British pair give a friendly wave.

The Yamaha trio of Tony Rutter, Mick Grant and veteran Jack Findlay had the record crowd on its feet for the entire race. The decision finally went to the ex-Norton teamster Rutter, but he had to put in a scintillating last lap at over the ton to gain the runner-up slot. Findlay, mounted on the fastest machine in the race (clocked .6 mph up on the MV), lost the battle for third with Grant by only twelve seconds. Fancied runners Rod Gould and Charles Mortimer (second fastest in practice), were out of the reckoning early in the proceedings with mechanical bothers.

Phil Read made no mistakes about his intentions in Thursday's 250 race as he shot into an immediate lead and never looked back. Mounted on his private air-cooled Yamaha, Read had an edge in top speed over factory runner Rod Gould, and once he realized this, he just turned up the wick and disappeared. Read had such a margin that he even had time for a thirty-second gas stop while Gould's works water-cooled mount was fitted with a seven-gallon tank so that he could go the four laps without the dreaded pit stop.

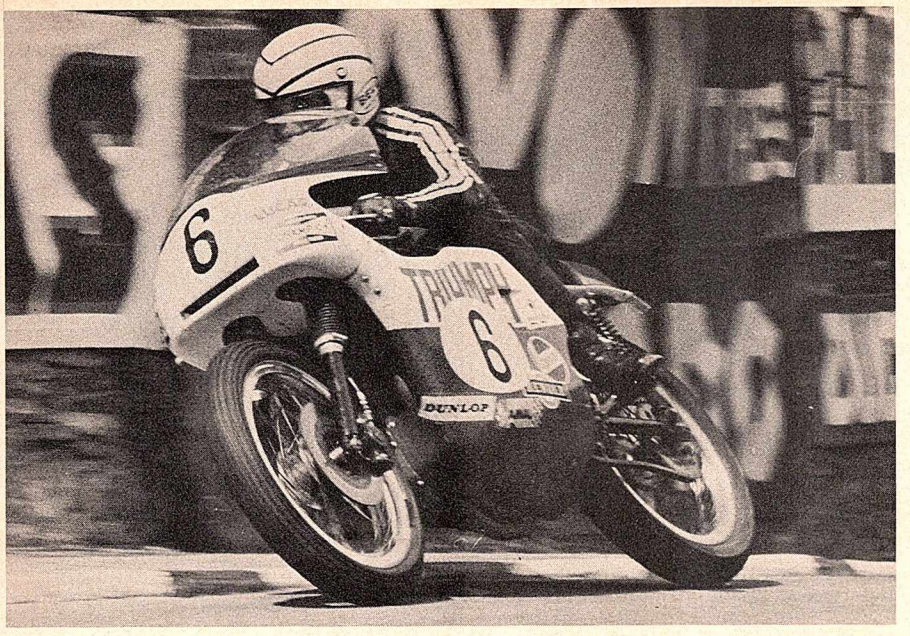


Tony Jeffries had to be content for a distant second in the Formula 750 race. Ray Pickrell won it on a similar works Triumph Trident.

With threatening clouds as a backdrop, the Douglas Promenade is lined with boarding houses and motorcycles.

With the current and ex-World Champs out on their own, a good battle developed down field for the rest of the leaderboard placings with TT regular John Williams getting third just ahead of his namesake, but no relation, Chris Williams.

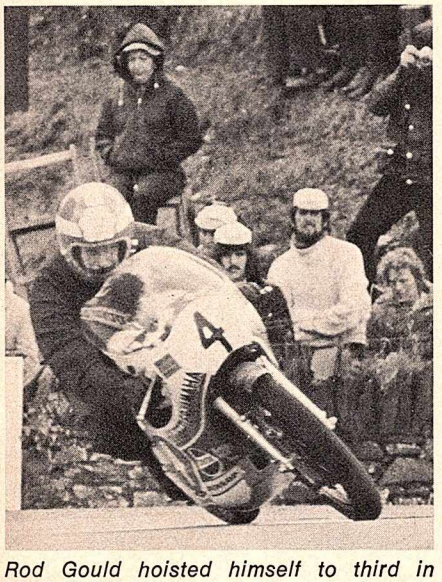
Rapidly gaining ground as the premier event of TT week, the Formula 750 bikes came to the line and on paper, the race could have gone to anyone of ten people. However, Ray Pickrell was out to prove that his dominance of the production race was no fluke, and the Londoner gave the Triumph factory its second big win of the week in quite convincing fashion. Once again the threat from the John Player Norton team never materialized. Gearbox problems put out the Norton trio of Peter Williams, Phil Read and John Cooper before they could make their bid. The only rider to give Pickrell any anxious moments was teammate and last year's 750 winner, Tony Jeffries. Pickrell had to catch and pass his Triumph partner in the early stages, but this was made a bit easier by the fact that the tank strap on Jeffries' triple broke as



Ray Pickrell and his all-conquering Triumph three on his way to the Formula 750 win.

Making it an MV one-two in the 500cc race, Alberto Pagani lapped at over the ton to finish second to 'Ago.'

Brian Rust guns his BSA sidecar around the scenic Manx farmland.



Rod Gould hoisted himself to third in the World Championship standings with a second in the 250 race on his works water-cooled Yamaha.

he was hurtling down the infamous Bray Hill on the first lap. By the time that he had the situation under control, Pickrell had his sights set on victory lane.

Jeffries came in a distant second to make a one-two sweep for Triumph with Jack Findlay bringing one of the 750cc, water-cooled, Daytona-type Suzukis in for a well deserved third. The works two-stroke was clocked as the fastest machine ever to be placed in the Isle of Man. Breaking the speed trap set by Mike Hailwood on the legendary 500cc Honda four, the Suzuki wailed through the traps at 158.6 mph.

The 350 and 750 races were postponed a day because of the hurricane-like weather, but Friday dawned even worse. However, after a delay, the 125s were on their way down Bray Hill and all eyes focused on the two-horse race between the works Yamaha of Charles Mortimer and the works Morbidelli of newcomer Gilberto Parlotti. The Italian grabbed an early lead in the blustering, driving rain, but before he had a chance to ease the pace, he crashed fatally at the very fast Verandah section of the mountain. This left Mortimer with a fantastic lead and he cruised home the easy victor to make it two tiddler wins in two years.

Charlie Williams, fresh from his fourth place 250 ride the previous day, took second berth with Bill Rae breaking up the Yamaha monopoly with a well ridden third on his Maico single.

When Parlotti's accident was reported as fatal, Giacomo Agostini tried to withdraw from the following 500cc Senior event. The two dashing Italians were close friends and the double World Champion was busy trying to get permission from Count Agusta in Italy to withdraw from the race because of the tragedy. However, the Count couldn't be reached and as he had made a commitment, Agostini raced in the Senior and as expected, won as he pleased.

The runner-up position went to "Ago's" MV teammate Alberto Pagani, but John Williams looked all set to roust the second MV from its perch until he retired on the last lap. Mounted on a single cylinder Matchless G-50, Williams caught and passed Pagani on the second lap as the Italian slowed with an oil leak, and by the time that the MV was back in the hunt, Williams had pulled out a bit of breathing room. His glory was not to be, however, as he ran out of gas on the last tour and pushed in for a downfield finishing spot. Third place went to the Kawasaki H1-R of Mick Grant who put in some of the best performance of the week.

OFFICIAL RESULTS

750 Production

1. R. Pickrell (Triumph) .... 100.00 mph
2. P. J. Williams (Norton) ... 96.53 mph
3. D. J. Nixon (Triumph) .... 94.04 mph
4. H. Dahne (BMW) ..... 92.30 mph
5. M. Ashwood (Norton) .... 92.08 mph
6. A. Copland (Triumph) .... 90.99 mph

500 Production

1. S. Woods (Suzuki) ..... 92.20 mph
2. R. Bowier (Triumph) .... 92.09 mph
3. W. A. Smith (Honda) .... 91.16 mph

(Text continued on page 74)

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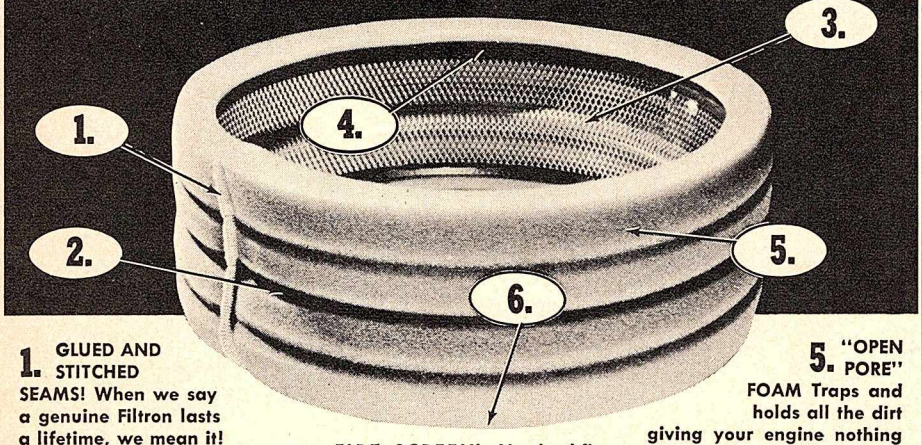

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UP ON THE PEGS

(Test continued from page 10)

ments, but it was successful. The '65 Isle of Man Six Days was a fiasco in the rain yet, 6 years later, when it refused to rain the event became a, "Bloody cakewalk," according to Sammy Miller, 9 times Gold medal winner.

So ISDTs have been all sorts of things, yet there is one thing they all have in common, it is the same for everybody who is competing. When the AMA was told they could have the ISDT, my personal choice was Reno, Nevada. My district chose Las Vegas, Nevada, and I went along. My many friends in Europe who are involved with the Internationals wanted Las Vegas purely because of that city's attraction to foreigners. Reno has a greater variation of terrain including the Lake Tahoe area. A Six Days in 'Vegas would be extremely difficult for the riders in my opinion.

The advantage of being host of the ISDT is being able to call your own shots. You can have a bike behind every bush and a mechanic to go with it. This is part of the game, although getting caught is not only embarrassing but means exclusion.

But we can get our grubby hands on that Trophy without resorting to such common trickery. We have our desert, our dry climate, and our rocks and sand to play in. European Six Days riders are all very used to Berkshire-type country with its wet and cool atmosphere. Bring out a little sunshine and they tend to go limp like a candle exposed to a heat lamp. We have many leathery, tough desert riders who absorb gallons of water and Gatorade and thrive in the heat of the sun. I am confident the European could handle the terrain, but I doubt if they would be competing against

(Text continued on page 40)

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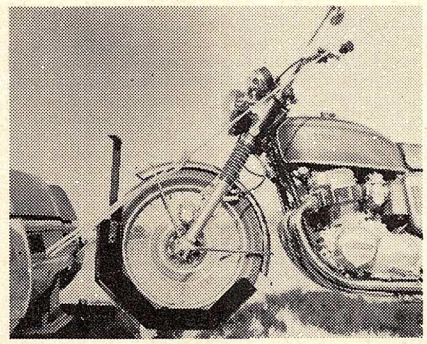

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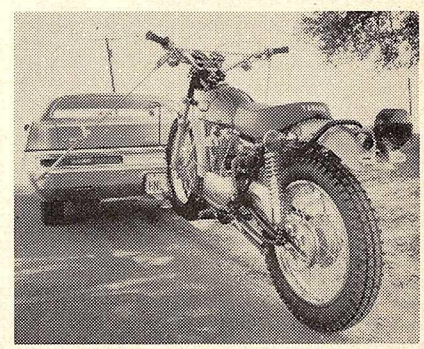

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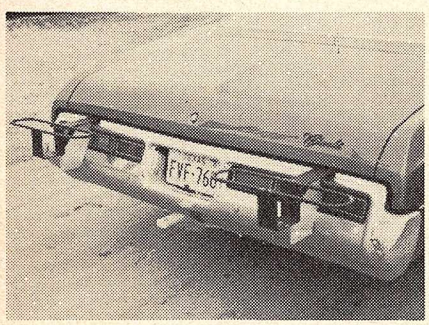

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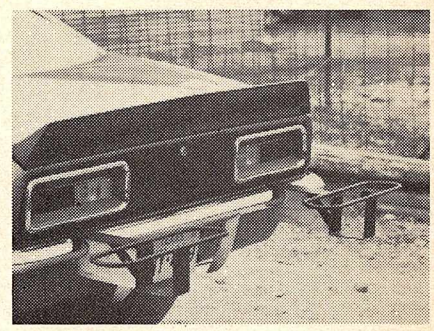

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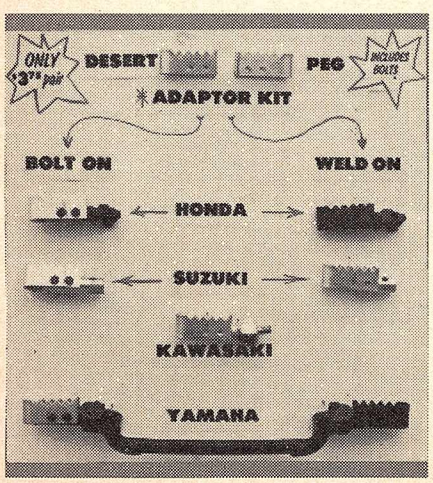

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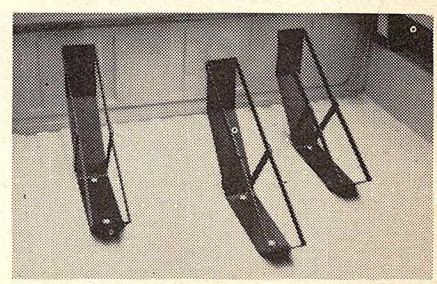

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ALONG THE TRIALS TRAIL

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REPORT AND PHOTOS BY RON SCHNEIDERS

For serious enduro riders and cross country racers the ultimate competitive experience is the International Six Days Trial. It is the same as the Isle of Man is for road racers and the Indianapolis 500 is for sprint car drivers, a World Championship event with impeccable credentials and no serious challengers. Surprisingly, up until a few years ago it was relatively easy for an American to compete in the ISDT. The number of riders who knew about the event and really wanted to go was very small, and there was no representative of the FIM (the international sanctioning body which controls the ISDT), in this country. The Europeans were happy to see any representative from the U.S. and made it easy for interested riders to compete. In recent years, however, things have changed.

First of all, motorcycling has increased enormously in popularity so many more riders now want to compete in the Six Days. Manufacturers are interested because a Gold medal from the Six Days is a valuable advertising gimmick. And finally, since Americans competing in Europe are no longer novelties, we are faced with the problem of conforming to the same rules as everyone else.

Two years ago the AMA got into the act. They became the official arm of the FIM in this country with the power to decide who would ride and who wouldn't. With the power came the responsibility to make sure that the U.S. was adequately and honorably represented. They have been slowly but surely building a "championship trail" for prospective ISDT competitors consisting of ISDT qualifying rounds held in various parts of the country. Last year two were held; this year there were six. (Eight were scheduled, but the events at Fort Hood, Texas, and Las Vegas, Nevada, were cancelled.)

Qualifying rounds are not needed to determine the riders on our top teams. There are three of these teams: the Manufacturer's Trade Team, the Vase "A" Team, and the Vase "B" Team. The members of these teams could easily be picked on the basis of past ISDT performance. On this basis for the Manufacturer's Team one would select riders from the Penton bunch, possibly, Tom, Jack and Jeff Penton, Dane Leimbach, Dick Burleson, and Billy Uhl. In the event that any of these could not make it, there are equal quality replacements in Doug Wilford, Gene Cannady, and Bob Grodzinski. The Vase "A" Team could be either a Husqvarna team of Lars Larsson, Frank Piasecki, Malcolm Smith, Ron Bohn, and Jack Lehto, or a Yankee team of Charlie Vincent, Dave Latham, Dave Eames, and Don Cutler. These are the teams that you would pick on the basis of past performance, and this current round of trials underscored that selection in spades. For these riders the trials were not to determine whether or not they would have a spot on one of the prime teams, but to provide them with experience, and aid in sorting out regulars from alternates. The alternates if not needed would ride on the less important club teams and manufacturer's teams.

The top teams, though, are only about 25 percent of the total team. The balance will have to be filled by less experienced, less well-known riders, and it is the selection of these riders that is the real business of the qualifying process. There is an added bonus in that the qualifying rounds provide these newer riders with invaluable experience in the complicated ISDT procedures and rules. Without this experience the first-time ISDT rider would almost certainly flop.

The first round was held at Bristol, Virginia. The weather was miserable. It rained so hard that some 70 entrants did not even show up to start. Trails, clogged with slower riders bogged down to the axles, prevented many of the better riders from having a fair shot at Gold medals. There was simply no room to pass. The speed test was a nightmarish blend of thick fog and thicker mud. By the end of the first day a mere 78 of the original 340 entrants remained.

While the weather didn't help, the real fault with the Bristol event lay with the organizers. This was the same group that has promoted the Lonesome Pine Enduro for so many years. For this occasion, they changed the scoring system a bit, but otherwise ran the sort of event they were most familiar with: an enduro. They incorporated the traditional narrow trails and maintained the same attitude of, "We'll run the course we've laid out regardless of

the weather." This doesn't work in Six Days competition. The riders must all have a fairly equal chance to complete the course in the required time. Bottlenecks and impassable trails are verboten.

Even with the difficult and often unfair conditions, the riders mentioned above for the most part did well. Jack Penton won one of the three Gold medals that were awarded. Larsson, Burleson, Leimbach, Piasecki, and Bohn were among the 18 who were awarded Silvers, and most of the rest finished, earning Bronzes. Also emerging with good scores and Gold medals were two unfamiliar riders, Jake Fisher and Sonny Walls. Sonny Walls is still an unknown quantity. He is from Bristol and he did not do anything significant in any of the other trials. This may be merely a matter of economics, or it may be that he had an unusual advantage that worked for him. Jake Fisher set the fastest time of the trials, and he is definitely a rider to be watched. As we will see, his skill carried over into some of the other events. One team with some ISDT experience looked very good: the National Competition Riders of St. Louis, Missouri, consisting of Dave Mungenast, Gerald Pacholke, and Ed Schmidt. They all finished on Silvers.

If a Trade Team trophy was awarded in this event, it's been kept quite a secret. No mention was made of it in either the local weekly cycle newspaper or the AMA monthly magazine. A call to the AMA office in Worthington produced a speculation that the Penton Team won the Trade Team award, but one of their members (Doug Wilford), failed to finish while all of the Missouri team finished and apparently all of the Husky team finished.

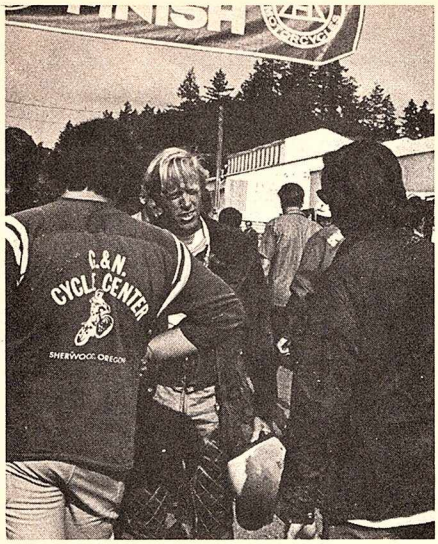
Trial number two was held in Potosi, Missouri, in weather conditions that were, if anything, worse than those of Bristol. During the two days before the trials and during the trials itself the area was treated to a fine blend of tornados, cherry-sized hail, torrential rain, and a sporatic bit of sunshine. Most of the rain fell in the first three hours of the trial, and it was so heavy that cars had to stop because their windshield wipers couldn't keep ahead of the water. Some local riders started the event without the all-important Barbour suits. They came into the first check looking like cases for the pneumonia ward of the local body shop.

Of approximately 250 riders who started the event on Saturday, less than 30 made it into the impound Saturday night. No one had any illusions left: They knew to a man that if the course was of the same degree of difficulty on Sunday, they weren't going to finish. The creeks (some of which weren't creeks at all, the day before), were running so high that riders were worried about being swept downstream. Fortunately, the organizer of the event, Eddy Viermann, exercised good judgment. He delayed the start one hour and changed the course to miss the worst of the creek crossings. It was shortened to 56 miles from the original 180 miles. Even so, one disastrous crossing wiped out half the remaining field. There were 16 finishers, three on Golds, six on Silvers, and seven on Bronzes. Penton had two Trade Teams entered, and they finished first and second in the Trade Team competition. The Missouri Competition Riders had a new name, the St. Louis Honda Club Team, but they were the same guys and they won the Club Team award. All three Gold medals were won by members of the Penton teams, Doug Wilford, Jack Penton, and Jeff Penton. There were no unknown riders who did well in this fantastically tough trial.

Both the trials described grew hastily out of enduros. The St. Louis Trial was the old Busted Piston run. Both suffered from an enduro-type attitude on the part of their organizers, who will require several years to complete the change in thinking necessary to go from enduros to trials. The Berkshire was different, having a six-year history of being run solely as a trial. The difference is readily apparent in all aspects of the organization, but most important is the character of the course. The two previous trials were at the mercy of the weather; if it was bad, the trial would be difficult if not impossible. If good weather prevailed, the trial would be relatively easy. Not so, the Berkshire: It is carefully engineered so that it will be very difficult regardless of the weather. Looking ahead to the time when we will hold the ISDT in this country, the ability to engineer the trials in this fashion is very important. You can't have the ISDT turn into a disaster because of bad weather. Another important factor is that this trial is a three-day event, where all the others were only two days. While a rider who is not in shape might manage to get through the second day of a trial on pure determination, he is unlikely to make it through the third day. Conversely, any rider who can make it through three days with both his body and bike functioning well is a pretty good bet to make it through the Six Days.

Riders at Berkshire not only coped with rocky whoop-de-doos in the rain, but with scores of downed riders, cameramen, and spectators.

Since the Berkshire is described



Bruce Brown, who broke his hand at Trask, went on to win a Bronze.

At Potosi, Jack Lehto, managing the Husqvarna eastern operation, tried a variety of silencers on his Husky.

The Penton team gets checked out in the pouring rain at Potosi, while checkers vainly try to keep dry. Shown is number 413, Doug Wilford.

Dale Richardson entered one of the few Triumphs at Bad Rock.

in detail in many articles, let's look immediately at the results. The winner of the Trade Team trophy causes no great surprise: It again fell to Penton Imports, the team this time consisting of Jack and Jeff Penton, Dane Leimbach, and Dick Burleson. Jeff, Jack, and Dane earned Golds, but Burleson dropped out with mechanical troubles. This didn't matter because the next best team, the Husqvarna "A" team, had only one Gold, Malcolm Smith, and three nonfinishers—Carl Berggren, Jack Lehto, and Lars Larsson. In the battle for the Club Team trophy, Bohn's Husqvarna team came out on top, defeating the Amherst Meadowlarks, a Penton team headed by the third Penton brother, Tom. On the Husky team were Ron Bohn, Frank Piasecki, Jake Fisher and Dave Mungenast, who abandoned his Husky to ride a Honda as part of Honda's development program. Jake Fisher, the high scorer at Bristol, besides winning a Gold, set the third fastest time for the entire field at Berkshire. This gives Fisher two Golds for two tries and a first and third overall in the speed tests, by far the most impressive performance by an "unknown."

In selecting ISDT competitors, performance in the Berkshire Trial should be more heavily weighed than performance in any of the other trials for several reasons. First, of course, is the fact already mentioned, that it is a three-day event. Any experienced ISDT'er will tell you that the third day is always the most difficult, for both the man and the machine. But besides this, the Berkshire is unrelentingly difficult. All of the other trials were somewhat easier on the second day, and there was no third day. In the Berkshire it was difficult to pick a "most difficult day." On Friday there was rain and fog. On Saturday the schedules were more difficult. On Sunday there were several difficult obstacles such as a really bad mud bog and a rocky hill that wiped out many competitors. Also on Sunday there was one 18-mile woods section that required the utmost of the riders to maintain the schedule. Thus marginal riders were sorted out right up to the very last. The courses at the Berkshire were all different; at some of the other trials the riders rode the same course both days, only in reverse on the second day. While this is an acceptable procedure, the riders gain an undeniable advantage in knowledge of the terrain. With all these considerations it's a good idea to look a bit farther down the list of Berkshire finishers for ISDT potential than seems fitting in the other

This is part of the special test at Potosi. Richard Smith (Bultaco), won one of the few Golds awarded at Potosi.

Jack Penton (Penton), shown here at Berkshire, was probably the best all-round performer in the entire round of trials.

Bren Moran (Penton), shown crossing a deep water creek at Berkshire. Moran won a Silver.

A fire delayed this rider, but after it was out, he continued and went on to win a medal at Trask.

At the Bad Rock, riders coming from several directions was not unusual. Don Stover, number 78 (Husqvarna), was one of the best of the unknown riders, shown here converging on Frank "Wheelie" Wheeler (Honda).

trial. Bren Moran, a Penton rider, won Silvers at both the Berkshire and the Bristol trial. Stan Rubottom, Husky, won a Silver at Berkshire and a Bronze at Potosi, and Ray Kussmaul, Penton, won a Silver at Berkshire and a Bronze at Bristol.

After Berkshire the championship trail took the riders all the way across the country to Trask Mountain, Oregon. The Trask trial was unique in one respect: It didn't rain. Dust, however, was a compensating challenge. Only the most well financed riders from the east were able to attend the Oregon trials. (On the other hand, there were virtually no riders from the west entered in the eastern trials with the exception of Lars Larsson and Malcolm Smith.) The eastern riders cleaned house at Trask, with the Yankee Ossa team of Cutler, Latham and Vincent winning a narrow victory over the Penton team consisting of Tom Penton, Dick Burleson, and Doug Wilford. All six riders won Gold medals.

A second trial, the Bad Rock trial, was held in Oregon the week after Trask. It was headquartered in Weston, Oregon. The two trials were of course different in many ways, but they shared certain similarities. They were both about the same length, and they both consisted of a single loop run in both directions. Marking was a problem on both courses, and few riders completed the courses without some "lost time." Compared to the eastern events, particularly the Berkshire, the trials were relatively easy. Schedules at the Bad Rock, though, were much easier than at Trask, but it rained at Bad Rock, making the riding inherently more difficult. Trask had several difficult obstacles including a makeshift trail through the woods that required jumping a great number of logs. Trask also had a number of very hazardous spots, one of which almost totalled the entire Penton team. Like duckpins they tumbled off a sharp curve into a ravine, one on top of the other. Bad Rock, on the other hand, contained only one really bad obstacle, but that occurred before the first check and finished the efforts of half the field right then and there. It was simply a loose, long, rain-slick hill that few made without pushing. Riders in poor shape didn't make it at all.

Neither of these trials by itself would provide a very good indication of prospective ISDT talent, but good performance in both trials should be a reliable indication. The Bad Rock Trade Team trophy was won by the Pentons with Husky second and the Yankee team, now riding Yankees instead of Ossas, third. Nothing new

here. On an individual basis, several outstanding ISDT prospects were revealed. The most impressive new rider was Don Stover of Herald, California, a Husky rider, who not only won Gold medals at both events but also finished fourth overall on the basis of special test scores in both events, beating most of the established eastern riders in two events in a row! He ranks with Jake Fisher as a logical choice for one of the top teams. Two other riders also won Golds on both days: Ben Bower, a California Husky rider, and Ron Jeckel, an eastern rider with some ISDT experience. Both of these riders, though, had considerably less impressive test scores. A number of riders should merit consideration for one of the minor teams for having one Gold and one Silver in the two trials. These are: Paul Villwock, Dave Ekins, Lane Leavitt, Tom Patton, Shelby Funderburk, and Bob Canfield.

Another trial has been held, but the official results are not available as of press time. That one was held in Albany, Ohio, and rumor has it that the Penton team again took the Trade Team trophy. Nothing of significance, as far as western riders are concerned, is likely to have happened because there probably weren't any entered.

The Penton team has completely overwhelmed the competition in these qualifying rounds, taking at least fifteen Gold medals and probably five of the six Trade Team trophies. A few questions remain, however, with respect to Vase Team selection. Husqvarna would seem to have made a slightly better showing than the Yankee team, on the basis of consistency, but the Husky team has seldom had the same makeup. One of their most impressive riders, Malcolm Smith, has been badly hurt and his ISDT future is at this time uncertain.

The Yankee team made a very impressive showing at Trask on their proven Ossas, but their performance on the new and admittedly clumsy Yankees has been sporadic. If they insist on competing on the Yankees, it might be better if some consideration were given to substituting a second Penton or Husky team for the Yankees on the Vase Team. The Missouri team of Mungenast, Pacholke and Schmidt augmented by Jake Fisher and Don Stover would seem an excellent selection.

Whatever the final selection, there can be no doubt that our riders and organizers have benefitted enormously from this round of qualifiers. It would seem that we are finally, really, and truly on our way toward building a championship caliber ISDT team. ●

Ron Bohn (Husqvarna), won a Gold at Berkshire with best special test score of the entire trial.

Ben Bower (Husqvarna), fixed a flat in his 15-minute work time before the Sunday start at Bad Rock.

Editor's Note:

After reading Ron Schneiders' comprehensive piece on the Six Days qualifiers I have decided to take the editor's prerogative to write this preface.

Before drawing conclusions it is always wise to look into the history of a subject. Schneiders, being a mid-westerner and only being locked into this subject for a few years, has drawn a few that don't really give you, the reader, a complete picture. This squabble between who are the best riders east or west has been going on a long, long time. Historically, and in fact, the west holds a decided advantage from Sportsman class riders right up to the Professionals. Just as the west, California in particular, is 3 years ahead of the rest of the U.S., and that's from choppers to cafe racers to motocross.

Bud Ekins was not the first American to win a Gold medal in the International Six Days Trial, he was the first in recent times. To clear up the myth of the Gold medal I would like to say it is not intended to take on the proportions of an Olympic Gold medal—far from it. An ISDT Gold medalist does not mean he is the best in the world, it only means he completed the Six Days without loss of marks for running late and made enough bonus points in special tests to be 75% as good as the best in that displacement class. Therefore, the high point man who wins a Gold in his class is the best for the year, only one American has ever done that, Bud Ekins.

In 1961 Bud Ekins went to England to ride his first ISDT. By coincidence there were two other Americans, Jim Brunson and Lloyd Linglebach, all from California. They made up a Club Team and were awarded a special award for sportsmanship. Bud, after establishing fastest special test times for the open class, broke his gearbox on the last day and wound up with a Silver medal. The other two Yanks got Bronze medals after numerous mishaps. This was not difficult for Bud who, during the mid-fifties, toured the European motocross circuits. During that stint he was, and still is, the only American to have scored points in an International World Motocross Championship race; he finished 5th in the British round against people like Rolf Tibblin, John Draper, and Jeff Smith.

The 1962 ISDT was held in Garmisch-Partenkirchen, Western Germany. Two Americans were there, John Penton and Bud Ekins. John crashed and finished on a Silver—not too bad for a first time effort. Bud won his first Gold and in doing so was the highest scorer in the open class, the best!

Poland was the ISDT site in 1963, Bud went there, too. He was the only American and again won a Gold finishing 3rd in class on special test scores. 1964 saw the first bona fide Vase Team from the U.S. Bud, Cliff Coleman, Steve McQueen, and myself. We went to East Germany and rode near production Triumphs. Bud broke his leg, Steve broke his bike, and Cliff and I won Golds. Cliff was 3rd in class on bonus points and I was 5th nudging out Roger DeCoster by a few seconds. There were five other Americans there also: John Taylor, now of Yankee motors, he picked up a Silver; Bill Stewart now with Yamaha, another Silver; Paul

(Text continued on page 80)

powder puff power

By Jeanne

WOMEN'S LIBBER

I just received a letter that came on pretty strong. I've decided to share it with all of you because it's really quite different than any other letter I've received . . .

Dear Jeanne,

I have to tell you I was really appalled by your "Powder Puff Power" (April, 1972). Perhaps some of your female readers are still entrenched in the, "Have you ever wondered how you're going to feed that man of yours," syndrome, but I'd bet that most of us outgrew such sexist "dilemmas" long ago.

Instead of devoting three columns to "Seal-A-Meal" cooking bags, why don't you tell us about the growing number of female racers, tourers, and mechanics? Or about riding problems which may be peculiar to women? Or tips on cycle maintenance and repair for those readers (male and female), lacking mechanical experience?

And while you're at it, could you use your influence to do something about the "Miss Modern Cycle" feature? To continue to portray women as pretty faces and nice bodies standing next to, or sitting on, the back of a motorcycle is a disservice, in my opinion, which serves only to perpetuate stereotypes instead of breaking them down.

I hope this letter doesn't make you defensive, because it wasn't offered in that spirit. Obviously, you are entitled to your own set of values, and I respect that even (especially) if they conflict with mine. On the other hand, perhaps mine is a perspective you haven't considered, in which case I hope you will seriously entertain it as a real alternative.

Now down to business: I have a Honda 450 and am contemplating a cross country tour this summer to North Carolina (probably with my husband who also rides a CB-450). We're still a bit paranoid (a la Easy Rider), about thefts, hassles, rip-offs, and attacks. Do you have any data concerning the actual number of such incidents? Any recommendations on precautions we might consider? I would also be interested in the figures for women who elect to tour alone. Some riders assert that the frequency of attacks on women cyclists is much greater than for male riders. Is this true?

Thank you for your patience in wading through this. I look forward to reading your column and perhaps contributing some of my own experiences.

Susan W. Varnum
Seattle, Washington

First of all Susan, the article on the "Seal-A-Meal" wasn't intended for *every* woman to follow. I only wrote it to perhaps help *some* of them that are faced with cooking problems while out on a road tour (like you're going on), or for the racer's wife out spectating a race in the toolies. In the California desert we don't have such luxuries as a Denny's-type place to stop and flop in a booth . . . the races out there are miles from anywhere! As for the tourer, not all of them can *afford* to eat in restaurants across the country (I know from experience, besides too many hot dog stands can really get to your stomach).

As for "Miss Modern Cycle," we get tons of mail each month with entries for this contest. Perhaps a few men still like the "pretty faces and nice bodies."

My "Powder Puff Power" is still a new experience for me, it takes a lot of time before any mail reaches my desk from the other Powder Puffers, I guess they're a little slow or they don't even know that this article exists. In the February, 1972 issue I wrote an article about three women's competition clubs—didn't you see it? The March article was about the growing amount of lap cutting on the Powder Puff classes, May was safety, and June had a variety of letters from the East Coast. Coming up are articles on clothing and spark plug reading (I'm actually going to spark plug school).

You shouldn't have any problem on your trip if you ride a bike like you write your letters, I'd carry a side arm because I'm a chicken. A woman alone always takes a risk, even walking her own neighborhood streets!

FEMALE MAIL ORDER

Lynn Wilson (that's a female), better known as Hawg Honey in the desert, has ventured into her own business. Known as Lynn Wilson Motorcycle Specialties, it is a mail order outlet for all sorts of goodies. Lynn has been an avid motorcycle racer for many years, plus she's earned the #17 number plate in Southern California's desert trailbike class last year. She's no slouch, the Greenhorn Enduro is also on her list of finishes!

So, whether you need anything from a carburetor part, to riding gear, to those new "trick" alloy gas tanks, Lynn's got it! She'll naturally accept orders from the male set, too. You can send for her catalog at 50¢, or enclose $1.50 for Lynn's and Webco's catalogs. Her address is, Lynn Wilson Motorcycle Specialities, Box 653, Chatsworth, California 91311.

Keep those cards and letters coming, don't stop now! This is just the beginning. Send your material to *Powder Puff Power* c/o *Modern Cycle* Magazine. And remember, *KEEP ON PUFFIN'!!* ●

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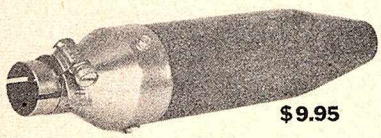

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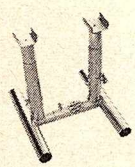

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Nuts & Bolts

Gentlemen:

Having noticed your mention of doing a "project" on the Honda XL-250 I am hoping that you will come up against the same problems that I have, and thereby save some future owners some grief, not to mention money.

I am referring to those sexy, but oh-so-delicate cast magnesium side cases. The first time out on my new 250 was a 100-mile cross country in the B.C. interior. Granted the combination of new machine and novice racer leaves something to be desired, and I managed to nail a large rock very neatly disguised as a sagebrush. The skidpan saved the crankcase, but not the clutch cover. Forgetting about such unimportant things as wet sumps, I managed another mile or so before including a piston, camshaft, and related other parts in my Monday morning parts order. Next time out, I was just play-racing with a couple of buddies when I dropped the bike on a relatively smooth patch of dirt. Now I have dropped many a machine on this track and never suffered more than a bent shift lever or brake pedal. This time, it cost me a timing side cover. Question: Is there any type of guard or skidpan on the market that will protect these side covers or do I make my own? In my humble opinion, the stock skidpan stinks, especially for trailing or cross country work where the bike itself is really a winner.

The other questions I have are: 1) I'm short (5'7"), and I'd like to know your opinion on the best way to lower the bike 2 inches without trimming the seat or cutting the frame, and 2) just how light can I get it, again excluding trick frames? I've already yanked all the easily detachable items (electrics), but I suspect that things like the exhaust system, while very quiet, weighs a hell of a lot more than it should. Last but not least is there a quarter-turn dual-cable throttle kit on the market?

I'll be waiting for that project article anxiously, and I hope that you'll be able to answer these questions for me. Thanks for a good magazine!

Paul Picard
Vancouver, B.C.

There are only two ways to lower a bike without trimming the seat or cutting the frame. One is to install smaller wheels and the other is to shorten the suspension, neither is wise nor recommended. The tank, seat and exhaust pipe are all heavier than they should be, so is the frame. Limits to lightness are only governed by your pocketbook.

I haven't seen any throttle kits for the XL, but it shouldn't be long. I've heard good things about installing the left hand CB-450 carburetor on the XL, it takes a conventional throttle cable lash-up. Next time, Paul, steer around the rocks.

Gentlemen:

Ten years ago I sold my 1956 Triumph Thunderbird. The carefree life enjoyed by an owner of one of those mild-mannered machines has been sorely missed even though I've owned two BMWs among other makes since that time.

A week ago I purchased a 1968 Triumph Daytona (500cc), and I would like to calm it down. It seems to me that this would make an ideal rig for me.

If you have any informaton on de-tuning a Daytona or Trophy (500cc), please let me know how to obtain it. If you had an article in a back issue, also, please let me know. Thanks very much.

K. Lougherty
Oreland, Penn.

The expensive way would be to install a set of 5T cams. However, I would just put in a pair of 7.5 to 1 pistons; you'll find it will run much cooler with the flat tops, too.

Dear Sirs:

I just went out and got three books on the XL-250 Honda. And, by reading all three of the tests, I think yours was the best. Well,

(Text continued on page 57)

Why pay $10 for a tire, when you can buy one of ours for $20?

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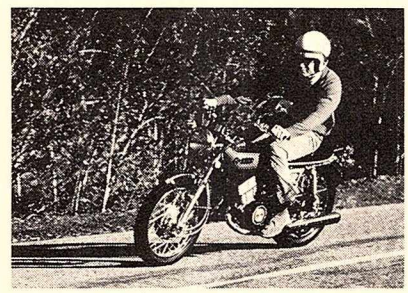

designed one with a tread for steering and one for traction.

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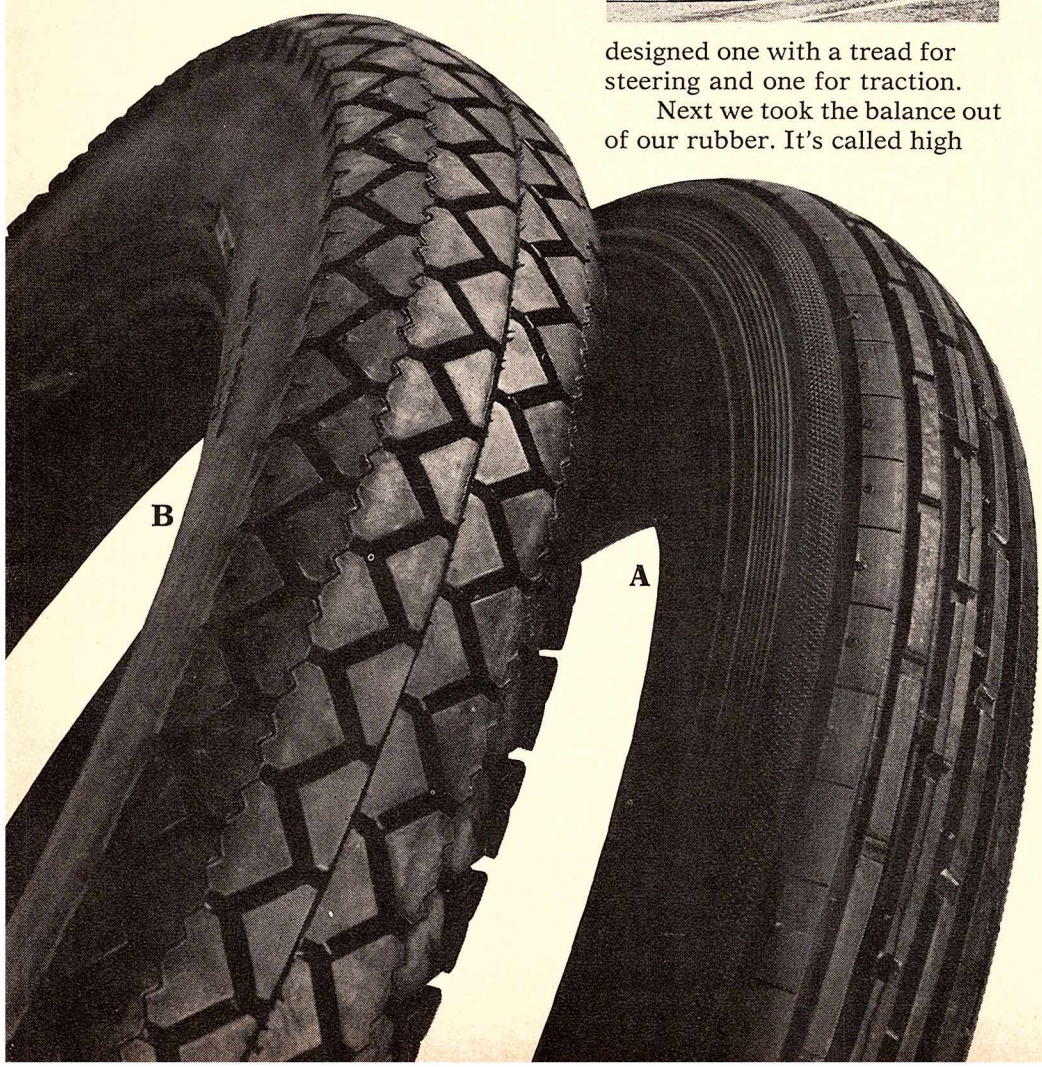
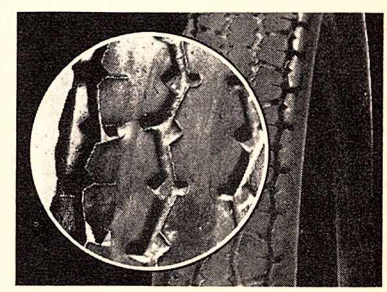


Avon Tire Tips



WHEEL ALIGNMENT: Unless a wheel runs exactly true under all conditions, a "scuffing" action between the tread and the road is bound to take place, resulting in rapid tread wear. Check your tires often for signs of "feathering" (see photograph) of the tread pattern edge, or see your Avon dealer.

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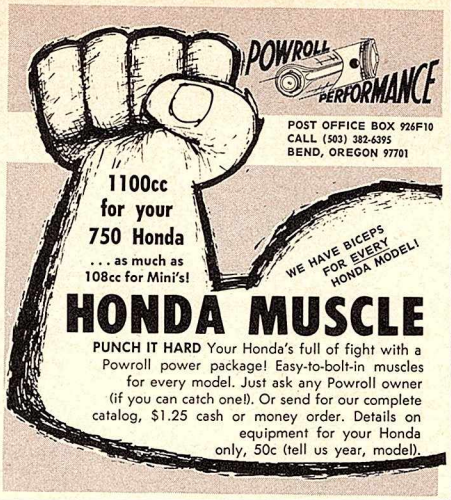
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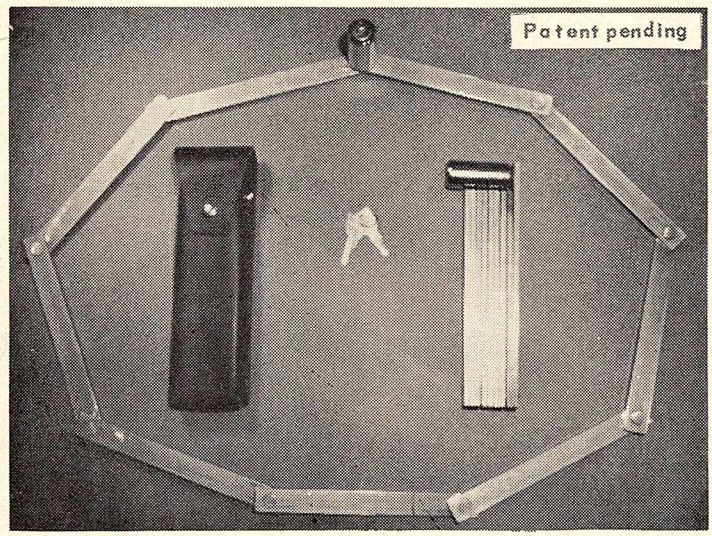

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Black Leather case with strap
Each joint withstands more than 1000 lbs. pressure
Secure your bike to any immovable object - Light pole, parking meter etc.

$19.95 plus handling (Add. $1. east of the Mississippi and $2 west of the Mississippi) No C.O.D. Reg. check or money order

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Safer than chains - resists bolt cutters, files, hack-saws

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MAIL

(Text continued from page 8)

Dalesman Enduro, however, you did not mention where we could contact Jeckel Industries or their distributor in the United States.

I am interested in purchase and/or franchise of the Dalesman line, and would greatly appreciate your help in contacting them.

Robert S. Rush
Washington, N. J.

You can reach Jeckel Industries, Inc. at: 38 Everts Avenue, Box 743, Glens Falls, New York 12801, (518) 793-5181.—Ed.

Dear Sir:

What in your opinion is the best dirt bike on the market between 100 and 175cc's for a twelve-year-old "hellion?"

Russ Worrall
Lema, Montana

A 1936 Harley-Davidson 61ci VL. —Ed.

Dear Sirs:

I am 14 years old and stand 5'2". I am planning on buying a Kawasaki 100 Trail Boss in the near future. I would like to know if it would be a good size bike for me. Have you done a road test on the Trail Boss? If so, what issue? If not, when? Keep up the good work, you have a great magazine!

Craig Kerns
Uniontown, Ohio

If we did a test on the Trail Boss it certainly has escaped my memory. At 5'2" I think you can get your tippy toes on the ground. —Ed.

Dear Sir:

Could you please tell me if you are going to test the Triumph T25T in a later issue? Or have you tested it in a back issue? If you have would you please tell me where I can get the issue? Would you please tell me the price of the back issue also?

Chester Smith
Mt. Jewett, Pa.

I doubt very much if we'll ever test the T25T, thank you.—Ed.

(Text continued on page 41)

The Daytona has changed very little in 5 years.

You don't fool around with a classic.

Today's Daytona 500 has the traditional, low-silhouette styling made famous by Triumph five years ago.
It isn't just another good-looking bike. It's a classic.

And Daytona's 4-stroke vertical twin engine hasn't had any major changes since 1959. It's the same basic engine that boosted Gary Nixon into two Grand National Championships. And won five straight National Enduro Championships.

At Triumph, we know when we have a great thing going. But we haven't been idle all these years. We've been refining. Perfecting. Making subtle improvements in the engine.
Tightening up the instrument package to make it more readable.

Shaving the dry weight down to 356 pounds. With a more efficient power/weight ratio, Daytona gets off like a jackrabbit. And handles more like a racer than a roadster.

Surprise yourself. Go dig a classic. Triumph's Daytona 500. It's a bike you don't fool around with.

ENGINE TYPE OHV–4 stroke
CYLINDERS 2
MAX. TORQUE 30.2 ft. lbs. @ 6750 rpm
BORE/STROKE 69 x 65.5
COMP. RATIO 9:1
TRANSMISSION 4-Speed gearbox
CARBURETOR 2 Amal 26mm conc.
FRONT TIRE Dunlop 3.25 x 19" K70
REAR TIRE Dunlop 4.00 x 18" K70
FRONT BRAKE 8" DLS
REAR BRAKE 7" SLS
WHEEL BASE 53½"
GND. CLEAR. 7⅛"
DRY WEIGHT 356 lbs.
FUEL TANK 2¾ gals.
OIL 7 pts.

The Hot One

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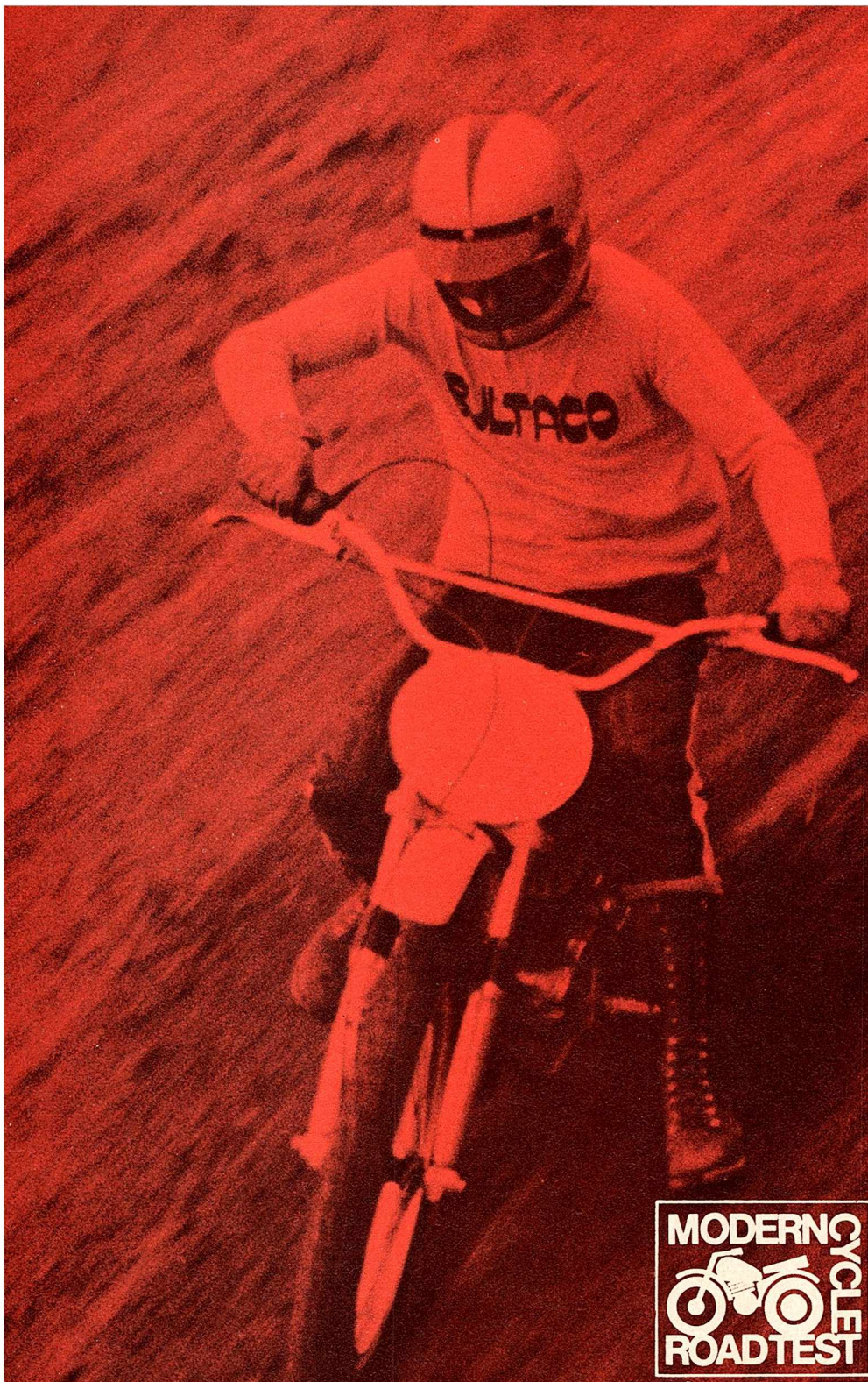


TEST:

Bultaco motorcycles are a strange and different breed of bike. And it should be because Senor Bulto, the man responsible for the creation of Bultacos, has reached a plateau gained by few other men.

He builds a small range of very sophisticated motorcycles, usually the best production machinery for the use in which they are intended. His Sherpa T set a whole new standard for English trials-type machinery. Lobitos are fun play bikes of 125 and 175cc displacements. He calls his Six Day bikes Matador, they are sturdy, and capable of winning Gold medals. The Sherpa S has been a 125, 175, and 200 scrambles bike that has seen numerous small improvements over the past 10 years. Pursang is Senor Bulto's motocross machine. Begun in 1965 as a 250cc scrambles bike, it has won many races when the pure works machinery and riders stayed home.

Once Senor Bulto made the comment that he thought he was the only complete motorcycle engineer in practice. "Walter Kaden of MZed knows engines as well as I, but he doesn't understand chassis and suspension," he said. Bulto has gone ahead utilizing the materials and machinery at hand to produce motorcycles that are competitive with the best, yet priced within reason.

A loose translation of Pursang would be thoroughbred. Since 1965 these mechanical race horses have followed the same painstaking improvements insisted upon by the maestro. Currently there are three Pursangs to choose

MODERN CYCLE ROADTEST

THE 350cc BULTACO PURSANG

BULTO TAKES HIS BEST SHOT AT THE BIG BOYS.

from; 125, 250, and the 350, our test machine for this month.

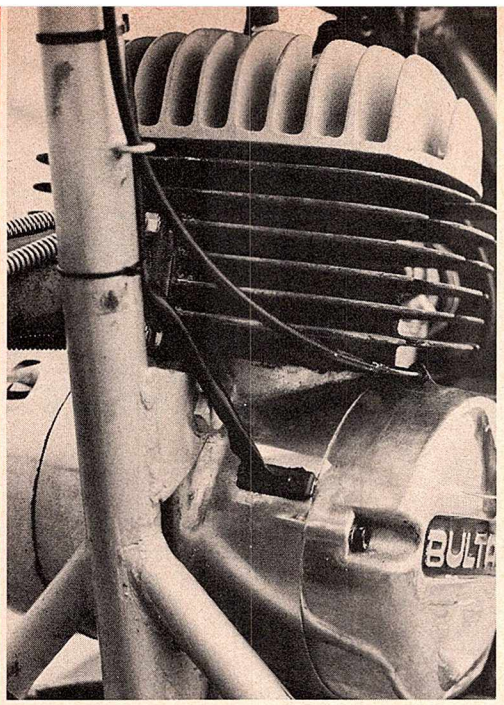
There was a time when motocross was dominated by big thumping 500cc four-strokes. Then the world FIM congress introduced 250cc world motocross Championship rounds and the two-strokes were in business. Competitors found their 250s would get around the same courses faster than the 500s and with less physical effort. So, the next thing that happened was only logical, they started boring out their 250s a little and began blowing the four-strokes right off the race tracks. BSA fought back for a few years in the game in fruitless effort to reinstate the old four-strokers, but the die had been cast.

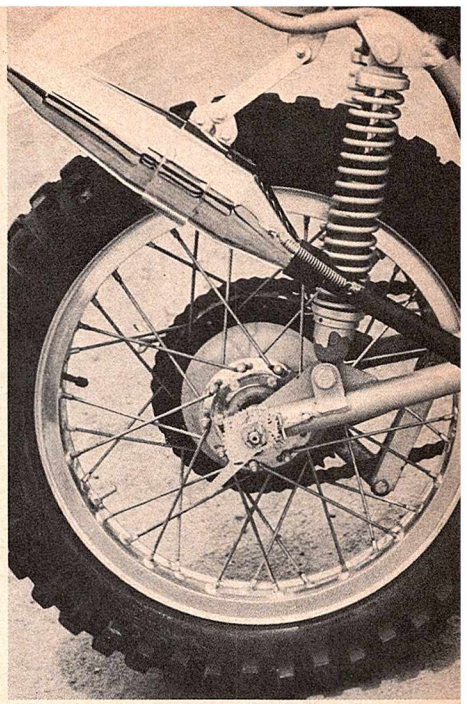
Then 350cc two-strokes began appearing, and 360s, 370s, 390s, 400s, and finally some 500s. Basically these bikes all stayed within the chassis of the 250s and pretty much held to the same weights. They were light, maneuverable, and plenty fast. To properly ride one you must first master a 250 because overzealous use of the throttle will get you on your head every time. But, we found the 350 Pursang to be easier to ride than the 125 or 250, its smaller cousins.

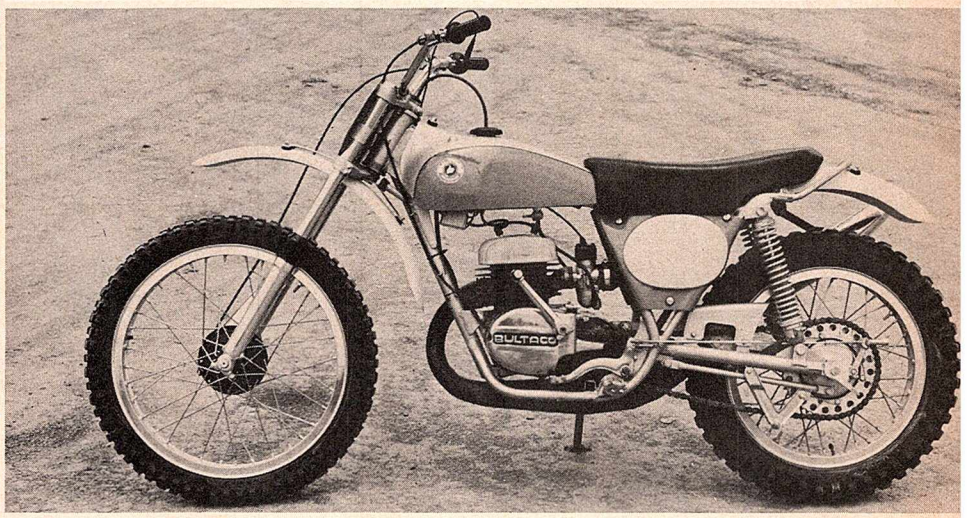
Virtually the same as the Pursang 250, the 350 has a bigger hole and a larger piston fitted. The 60mm stroke in conjunction with an 83.2mm bore gives a total of 326.03cc's. Credentialed with 33.2 hp at 7,000 rpm the bike doesn't seem as impressive as its predecessor, the 42 hp, 360cc El Bandido. The new Pursang weighs a lot less, has a more flexible engine, and one more speed forward; it's a better weapon than the old Bandit.

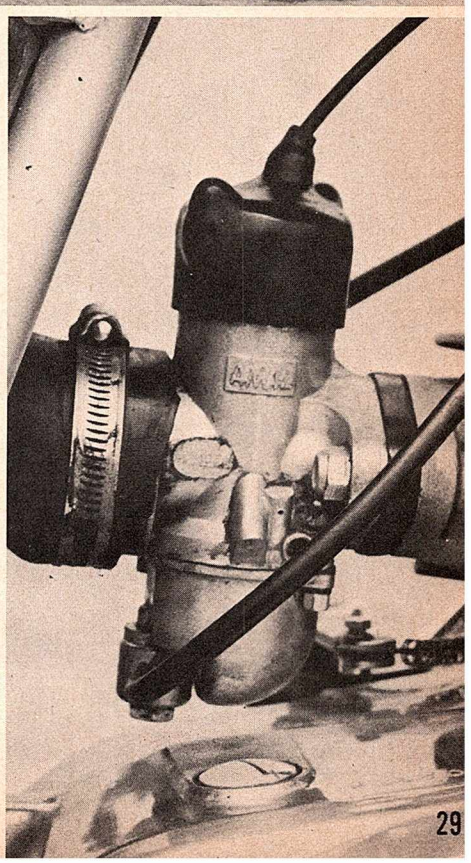
It seems now that all the Bultaco engines are coming out of the same mold. Five speeds, 60mm strokes, and Spanish Amal concentric carburetors. As a fact, this is close but not the total picture. In practice, Bulto controls his horsepower with compression ratios, cylinder porting, piston inlet timing, and by clever selection of the carburetor venturi size. Exhaust systems also fall into the picture.

There is just as great a selec-









MAKE BULTACO
MODEL 350cc PURSANG
PRICE AS TESTED $1,195.00
MAXIMUM SPEED AS GEARED 75 mph
WEIGHT 229 lbs. WET: Fuel Tank Half Full

ENGINE

Engine Type	SINGLE CYLINDER, 2-STROKE
Bore	83.2mm
Stroke	60.0mm
Displacement	326.03cc
Compression Ratio	10.5:1
B.H.P. at R.P.M.	33.2 AT 7,000
Carburetor	36mm AMAL CONCENTRIC
Ignition	FEMSATRONIC, DUAL PLUG
Starting System	FOLDING KICK
Lubricating System	OIL MIST, 4%

FUEL AND OIL

Oil Capacity	IN FUEL
Oil Recommended	BARDAHL VBA 50W
Fuel Capacity	1.5 GALLONS
Fuel Recommended	PREMIUM
Approximate mpg	ADEQUATE FOR 30 MINUTES

FILTERING SYSTEMS

Air	OIL WETTED FOAM
Oil	N.A.
Fuel	SCREEN

FRAME

Frame Type	SINGLE DOWN TUBE
Weight Distribution	FRONT: 50%, REAR: 50%
Wheelbase	55 TO 56 INCHES
Ground Clearance	8 INCHES
Peg Height	12 INCHES
Seat Height	32 INCHES
Handlebar Width	34 INCHES

SUSPENSION-TYPE

Front	TELESCOPIC FORK
Rear	SWING ARM

SUSPENSION-TRAVEL

Front	BETOR 7 INCHES
Rear	BETOR 4 INCHES

DRIVE TRAIN

Clutch Type	MULTI-DISC, WET
Primary Drive	DUPLEX CHAIN (2.375:1)
Countershaft Sprocket	13 TEETH
Final Sprocket	46 TEETH
Final Drive	SINGLE ROW CHAIN (3.53:1)

Gear Ratios	Internal	Overall
1st	.376:1	22.345:1
2nd	.513:1	16.378:1
3rd	.670:1	12.540:1
4th	.832:1	10.093:1
5th	1.000:1	8.402:1

TIRES AND WHEELS

Front	2.75x21 FIRESTONE KNOBBY
Rear	4.00x18 PIRELLI KNOBBY

IMPRESSIONS

	Poor	Good	Excellent
Throttle Response			●
Acceleration			●
Power Band			●
Starting		●	
Engine Noise		●	
Muffling		86Db(A)	
Vibration			●
Handling			●
Choice of Tires			●
Suspension			●
Rider Comfort		●	
Transmission			●
Instrumentation	DOES NOT APPLY		
Lighting	DOES NOT APPLY		
Toolkit	DOES NOT APPLY		
Paint and Chrome		●	
Styling		●	
Mileage		●	
Braking		●	

Distributor: West: ..... BULTACO AMERICAN LTD.
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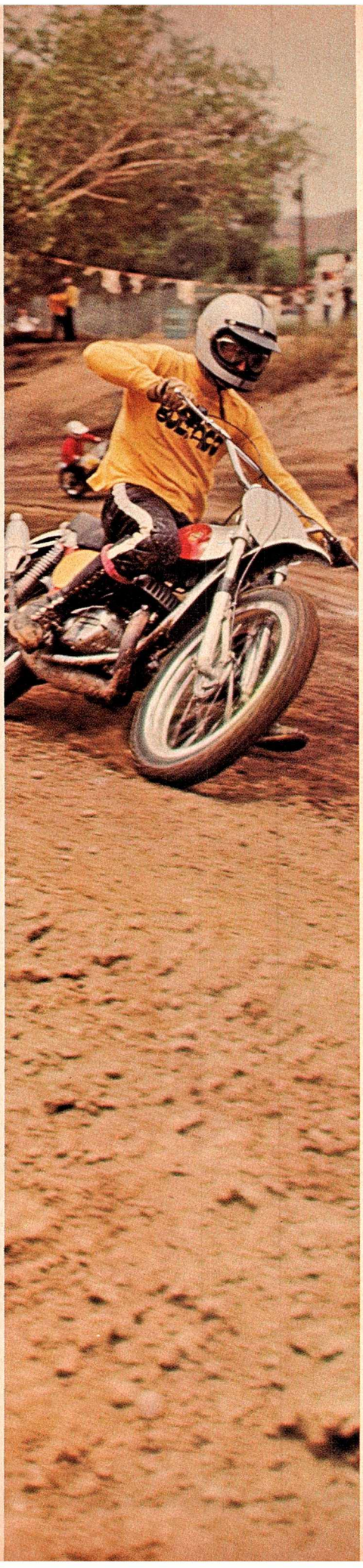
tion of gearbox ratios, from the close ones required for road racing to wide jumps used on cross country machines. The 350 Pursang uses a close ratio trans but one not near as tightly spaced as you would find in the road racing bikes. Actually, the power curve, handling, and selection of gears found on the 350 leaves little to be desired. The bike works extremely well on both a tight motocross course and the longer ones.

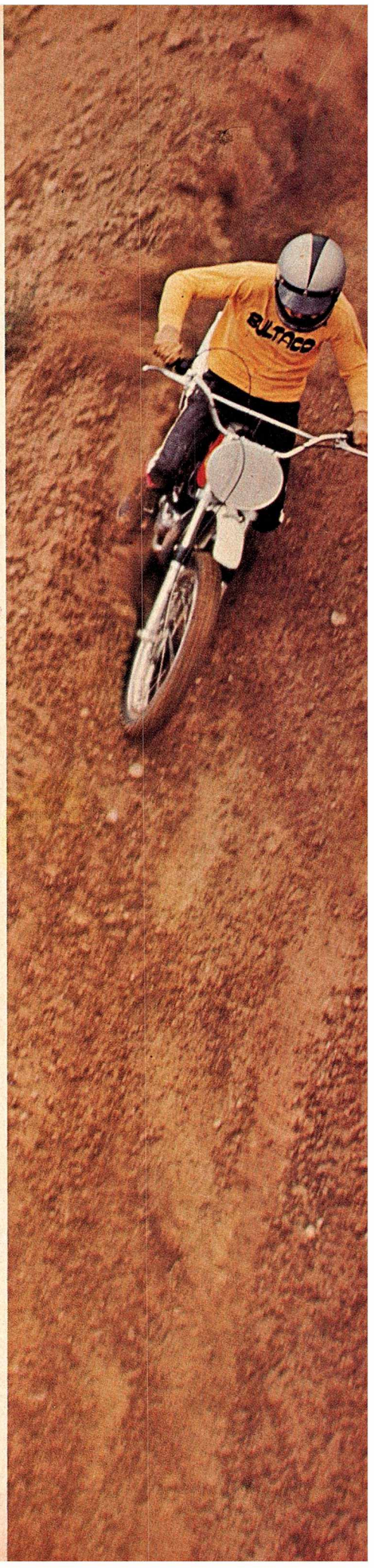
Power is abundant, but you can control it with the throttle so it doesn't come on in violent spurts. This is a real problem with smaller displacement machines from which they have extracted near maximum horsepower.

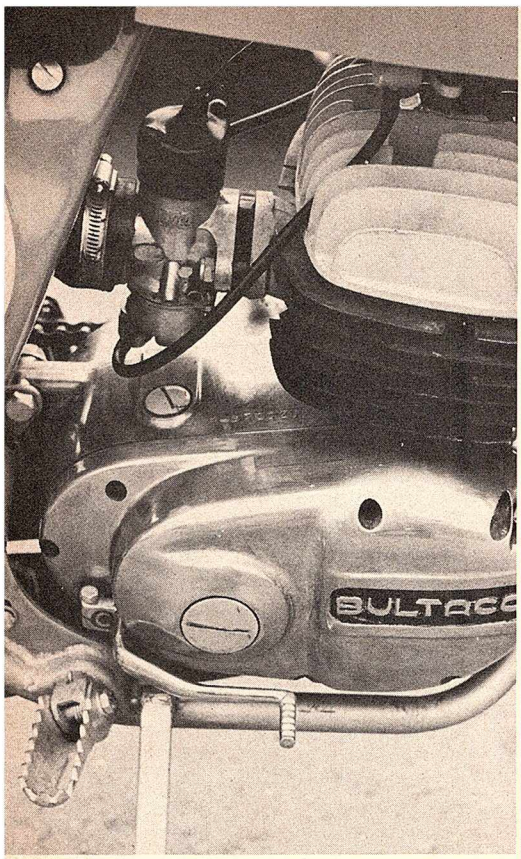
Cold, you try to over tickle the Amal until fuel runs freely out of the float overflow vents. The pointless Femsatronic ignition throws healthy sparks to both spark plugs, and the Pursang generally fires the first time. Running, it needs a little clutch slipping to get under way in first, once rolling you need not bother with the clutch. Although the all steel unit will take gobs of abuse, the gearbox is fabricated to change gears just by blipping the throttle and applying pressure on the gear-change lever. Backshifting is a little different drill, and the clutch should be used during this exercise.

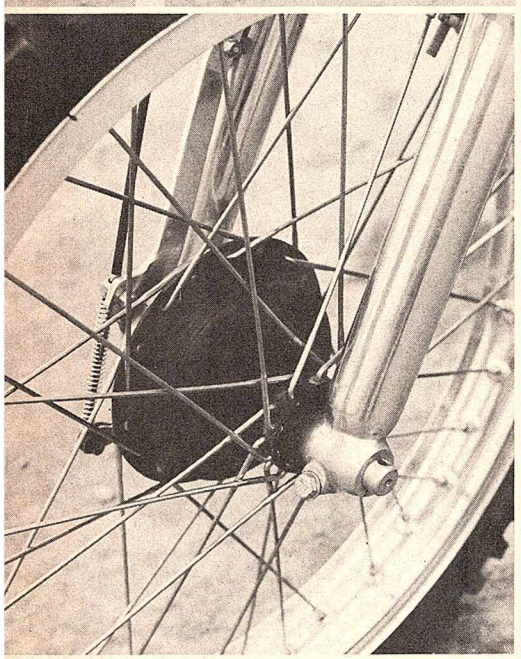
Pursangs are in a welded up steel tubular frame that features a single down tube. The 250s and 350s use a slightly heavier wall tube than the smaller 125s, but dimensionally they are all the same. Welds are of the finest Spanish tradition of cobbyness yet we have rarely seen one fracture of late. They carry a coat of silver paint over what seems to be no primer.

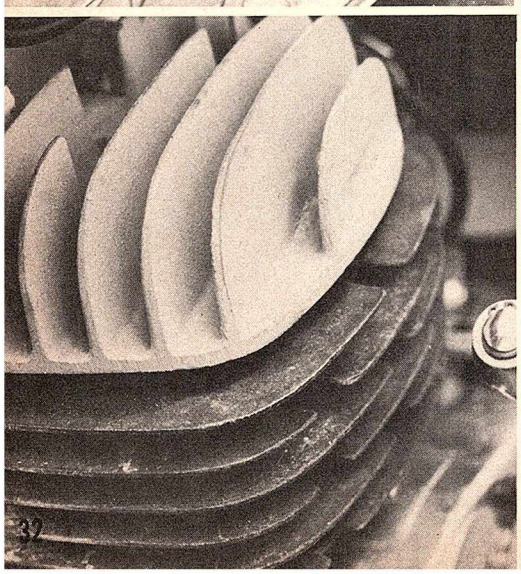
The fiberglass fuel tank and air box side covers are impregnated with famous Bultaco red trimmed with silver on the tank and yellow on the side covers. Fuel tank capacity is 1.5 gallons, adequate for 30 to 45 minutes of flat out racing. The tank is narrow, out of the way so the rider can do his gymnastics over the bike, and lends itself well to the overall lines of the machine. Both fenders are new, wafer thin, milky white, and almost transparent. Probably the lighest in the industry, they do their job of











keeping the rider moderately clean.

Another all-new item is the air filter assembly dreamed up by the Bultaco factory. They use a cylindrical unit slipped over a screen to hold its shape, and it's held into place with three springs in tension. The filtering device is oil wetted foam and seals against the rubber inlet tube that is clamped to the mouth of the carburetor. The fiberglass air box does a very good job in protecting the air filter from outside splashes and twigs. It does, however, create a vacuum resonance.

That chrome plated appendage stuck on the end of the exhaust stinger has got to be the most efficient muffler found on a production motocross bike. As large as it is, the most we could coax out of our decibel meter was 86 Db(A) with the Pursang.

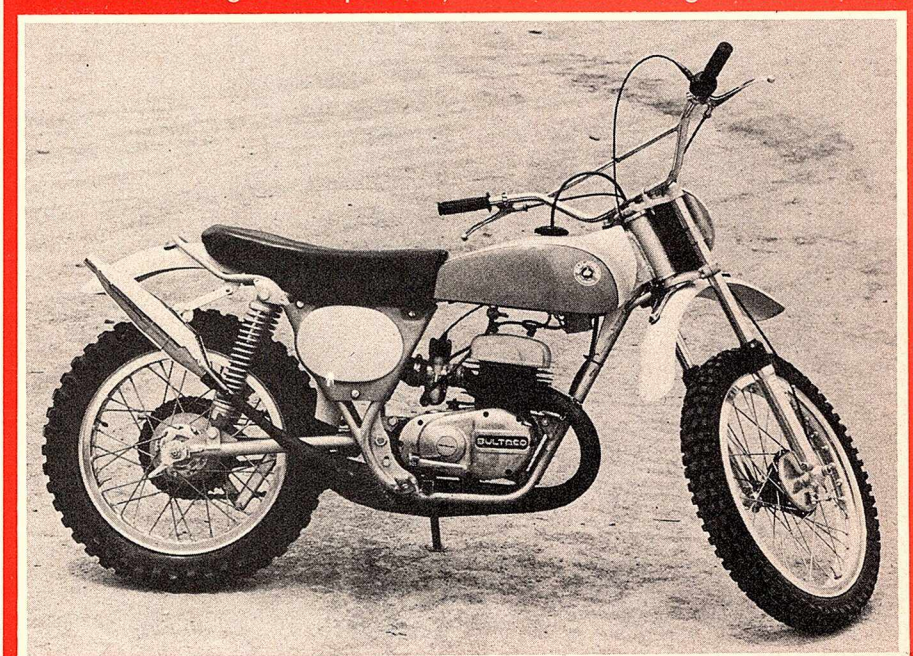
The bike has great suspension, super wheels (if you stay out of the mud), and good brakes for a motocross racer. Handling is predictable, a little slow, and well balanced. The 350 aviates very well with the rider being able to change the bike's attitude while in flight. Landings are softened by the long Betor suspension units made to Bultaco's specifications. Something has been done to the fork seals because we spent a full day motocrossing the thing and they didn't even begin to leak.

It's a comfortable bike with all the levers and foot-operated devices properly located. The seat is padded properly, but it has a hump right where a tall guy would sit if he were trying to get traction from the rear wheel. The hump is a recess in the seat base so the rear fender will clear. Remember, a 32-inch seat height is hard to obtain when using a 4.00 X 18 rear tire and 4-inch travel rear shocks.

Speaking of tires, the Pursang could use a 4.50 X 18, it certainly has enough power. We ran the bike with 6 psi in the rear and 8 up front, it seemed to handle very well with the front tire sticking right in the groove. Breaking the rear wheel loose and sliding is done with the throttle and small amounts of body English. Wheelies are another specialty for the 350 Pursang. It will pull some beauties as long as there is traction.

Besides having a decal on the fender that says '350' nothing else is a giveaway to this machine's size. A very squarish cylinder that's nearly as wide as the cases (with notches cut in the fins at strategic places), is fitted to the 250 also. The dull black cylinder looks like no other Bultaco cylinder, nor does its wide, natural sand casted head. Internally, the crankshaft is beefier to cope with the increased power of the 350 Pursang.

A complete racer, out of the box ready. That's the way Senor Bulto builds 'em! ●



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-250
-400
-501

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400cc — *Cycle World*

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501cc — *1971 Buyers Guide*

"To say that the MAICO K501 is a man's machine would be the understatement of the decade. His name would have to be KING KONG."
501cc — *Cycle Guide*

"Acceleration is fantastic. The MAICO literally leaps from corner to corner and does so with both wheels on the ground."
400cc — *Cycle*

"MAICO riders were the only competitors to finish every Moto in every race of the 1970 INTER-AM Series."
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"MAICO is one of the very few remaining companies you can get an essentially hand-crafted racing motorcycle from."
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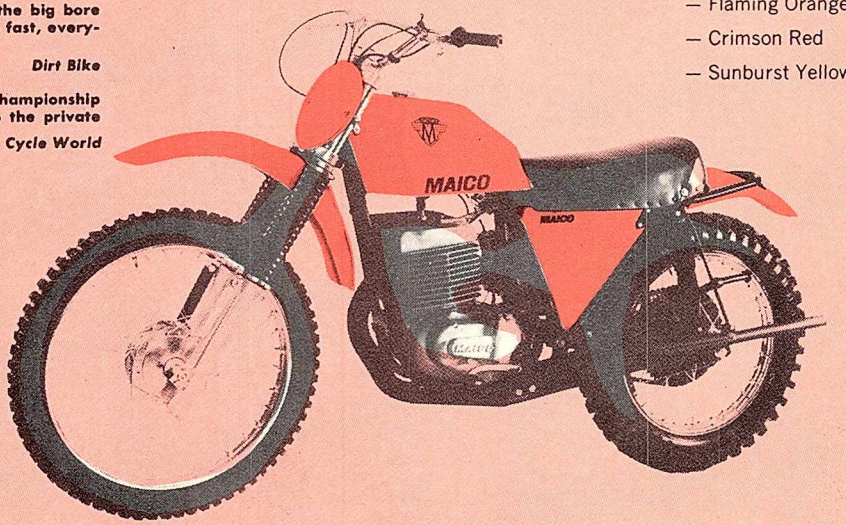

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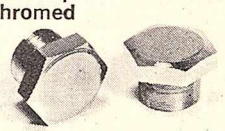

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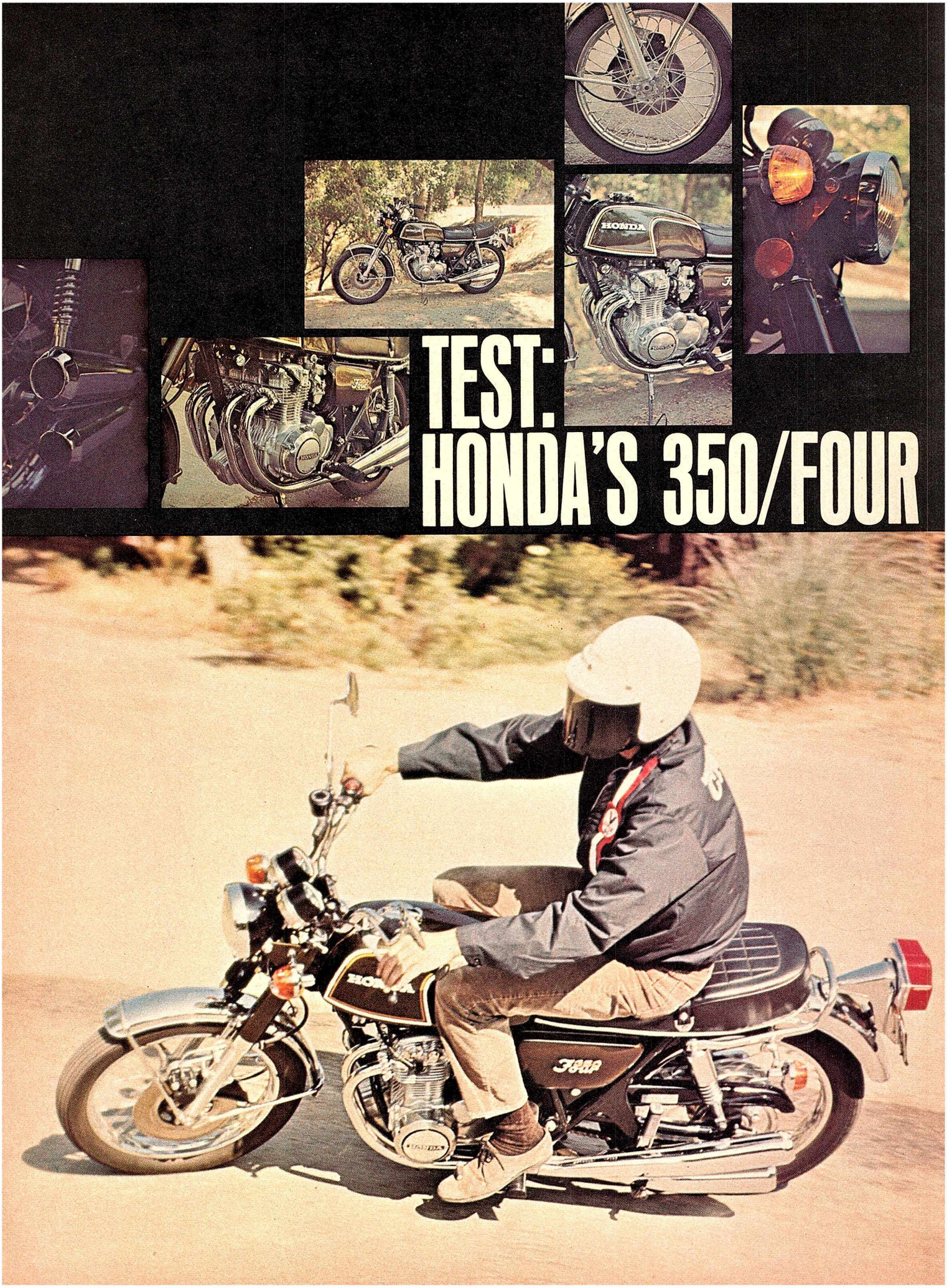

HONDA
TEST:
HONDA'S 350/FOUR
HONDA
HONDA

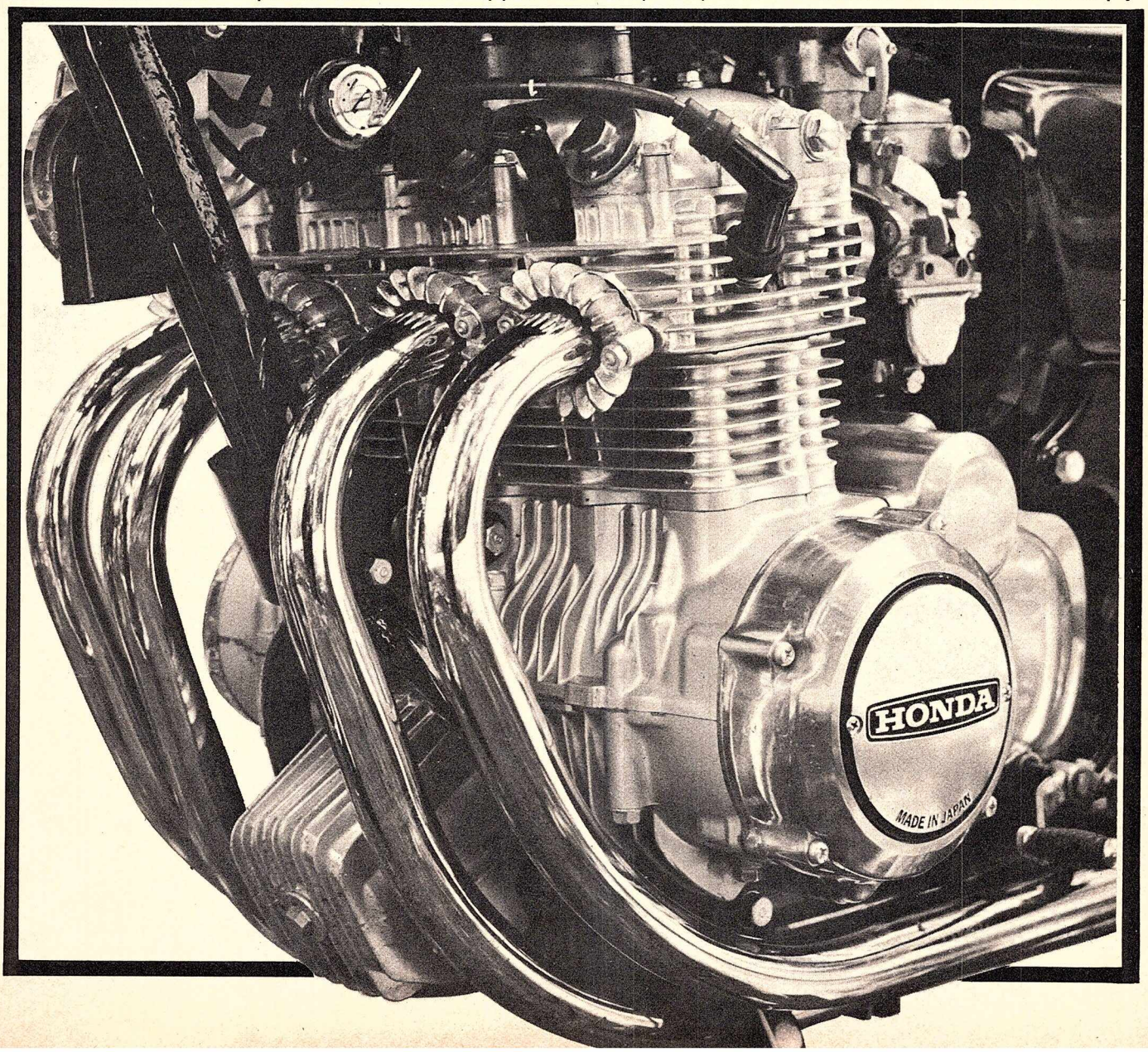
CIVILIZATION COMES TO THE MINI-MULTIS

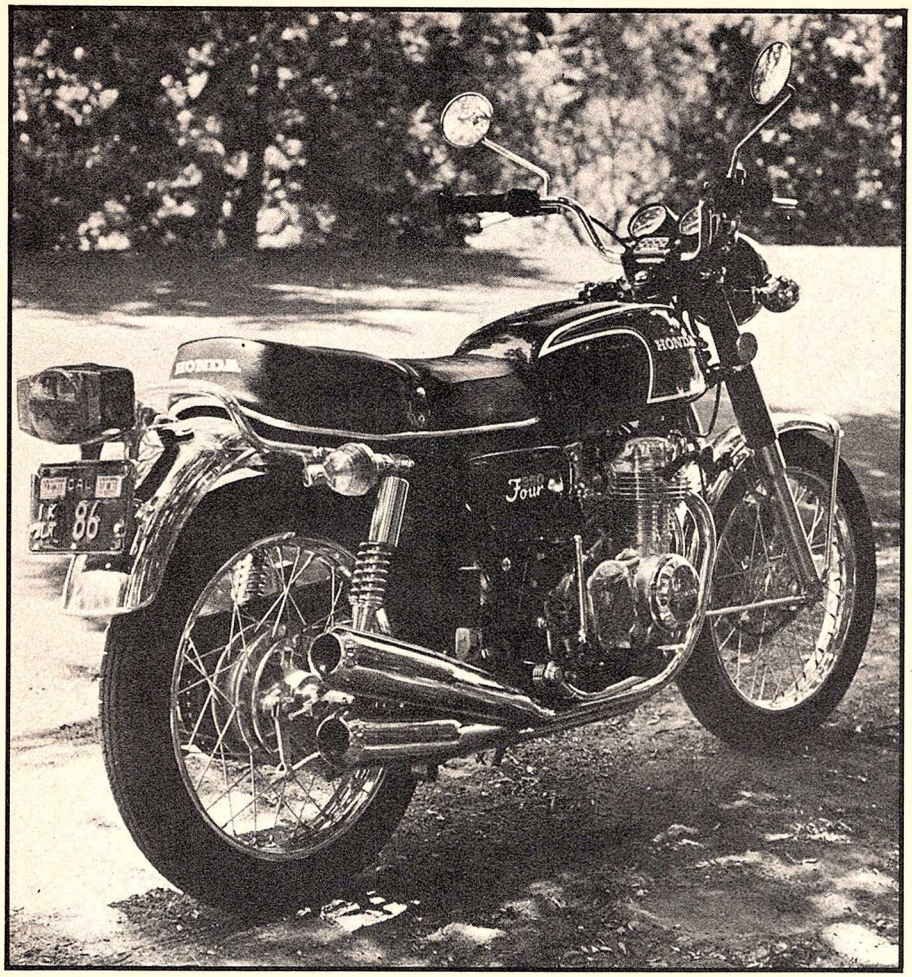
The comparisons are inevitable. Like a B+ student with a straight-A older brother, the Honda 350/Four is bound to meet with tongue clucking no matter how good it is. And it *is* good. But then there are the comparisons. The 500/Four is smoother. The 500/Four is faster and handles just as well. And what about the same-size competition from the other camps? Less money and a whole lot quicker off the mark.

A comparison of the 350/Four to the 500/Four is not valid; each belongs to a distinct market segment. And while the 350/Four is not the quickest entry in its class, where comparisons are valid, it may well be the best. In light of its overall performance and its unequalled quality, the 350/Four's modest acceleration becomes academic. Too, the whole matter of acceleration and quarter-mile elapsed time themselves become academic in light of the intended use of motorcycles in this category. We're hard pressed to imagine a situation wherein a small touring motorcycle is required to repeatedly accelerate from a standstill to blinding speed, time and again.

By implication it would appear that we rate the 350/Four as a bit of a stone; not so. It's a zeasty performer, moderately strong for its displacement. Acceleration, both from a standstill and at highway passing speeds, is good. Sustained speed performance sees it comfortably up long grades without an appreciable drop in speed, and it will run for long durations at legal highway and freeway speeds at about 60 percent of full throttle with a bolt-upright rider.

The 350/Four has a few flaws which mar its near perfection, and it's well that these be touched on now so that later qualifications will be clear. One would expect—certainly hope—that a four-cylinder motorcycle would be turbine like; indeed, the 500/Four is just that. While the 350/Four lives up to expectations throughout most of its range it does let down between 5,400 and 6,000 rpm with a noticeable vibration that is transmitted through the footpegs and hand grips. The magnitude of the vibration is slight; many motorcycles come to mind which produce greater vibration constantly, throughout their speed range. The quarrel here is not that the vibration is so terrible, but simply





that it exists when it shouldn't have to. Honda says that the vibration shouldn't be present. We know that. It's possible to theorize at length and still not come close to an answer. One popular notion is that the apparently light flywheel effect is responsible, but that's just conjecture. Whatever, it's disturbing. Like Raquel Welch with a hickey.

Not quite so surprising, the 350/Four has less than perfect suspension. The rear legs are much too stiff for a solo rider and inadequately damp on rebound. The front end is also stiff but not unpleasantly so, and its damping in both directions is good.

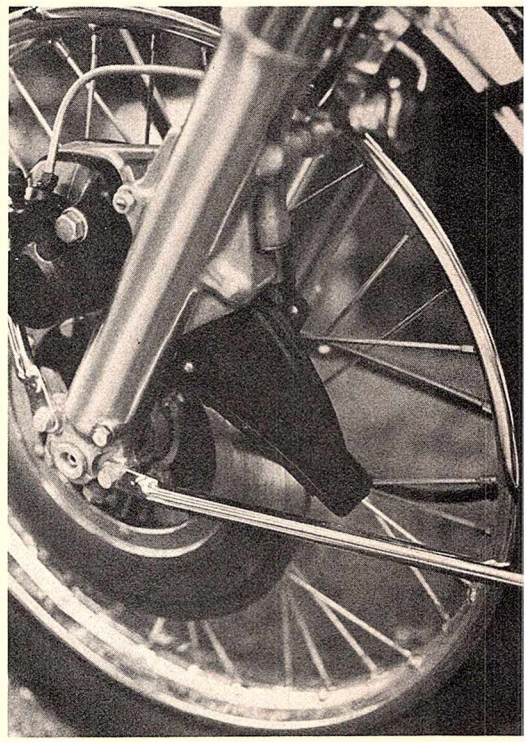
As a quarrel we would like to see the throttle turn shortened. To be sure, there are four throttle slides that must be raised all at once, but the added mechanical advantage of the present throttle over one that is fractionally quicker is slight.

So, those are its faults. They are important. But in view of its virtues they are easy to accept. The most striking aspect of the 350/Four is its appearance. Not only is the finish of chrome, paint, aluminum, and welds and accuracy of assembly typical of Honda's well-known excellence, but the proportions of the 350/Four are perfect. It has a solid, compact look that makes it seem more serious and less of a curiosity than its competition. The 350/Four is a refreshing departure from the current vogue in non-returnable, disposable motorcycles.

The mini-multi is not a sleeved-down, destroked version of its larger brothers; it's a new, well thought out, totally integrated package that will please its owner for years to come rather than simply whet his appetite for the "real article."

So successful is the overall design of the 350/Four that it is at least as well proportioned as the 500/Four, and in some eyes a handsomer motorcycle than the longish 750/Four. The correct proportions of the 350/Four are due in large part to the scaling of components, aside from the engine. Such items as headlight, brakes, rear spring shocks, front forks, and mufflers are fractionally smaller than their counterparts on the 500/Four. Combined with the smaller frame, the total effect is deceptive; the 350/Four appears to be larger than it really is. A comparison of the data page in this test with that for the 500/Four (October, 1971), further points up the differences.

One significant measurement—seat height—promises to make a Honda Four a reasonable mount for a whole new group of riders. Now, one no longer need be 5'8" or taller to comfortably enjoy the pleasures of four-cylinders. As one service station attendant put it, while fueling the 350/Four, "This is going to make a lot of short-legged people happy, myself included." As comfortable as the 350/Four is for the smaller than average rider, it is also very comfortable for the medium-size. Even spidery-types find little to complain of. And it will most certainly find favor with the ladies who, despite their liberation, have not become measurably larger and stronger.



The 350/Four's engine is a neat all-around scale-down of the half-liter version. The lower half of the horizontally split cases is more generously finned than either of the larger Fours in the interest of

better oil cooling. The valve train is characteristic Honda, chain-driven overhead cam with short, light rockers.

Crankshaft bearings are a mixture of ball and roller mains with plain bearing inserts at the connecting rod big ends. This seemingly prosaic arrangement works very well with a high-pressure lubrication system whose use is made possible in large part by the absence of external lines with their attendant joints and junctions. As we've come to expect of Honda products, the 350/Four is oiltight and can be kept clean and fresh looking with little more than an occasional dusting.

A husky roller chain transmits power from the center of the crankshaft to the primary shaft which is geared, through the clutch, to the transmission main shaft. Gear ratios are nicely tailored to the engine's torque and horsepower profiles; owing to its modest displacement it requires ratios that tend toward the lower end. However, the 350/Four revs freely, and strongly, to a very respectable 10,000 rpm. Once one gets used to all the business beneath the gas tank, high-speed touring is a pleasure with a surprisingly muscular power flow that sees the 350/Four up long grades with little decrease in forward velocity.

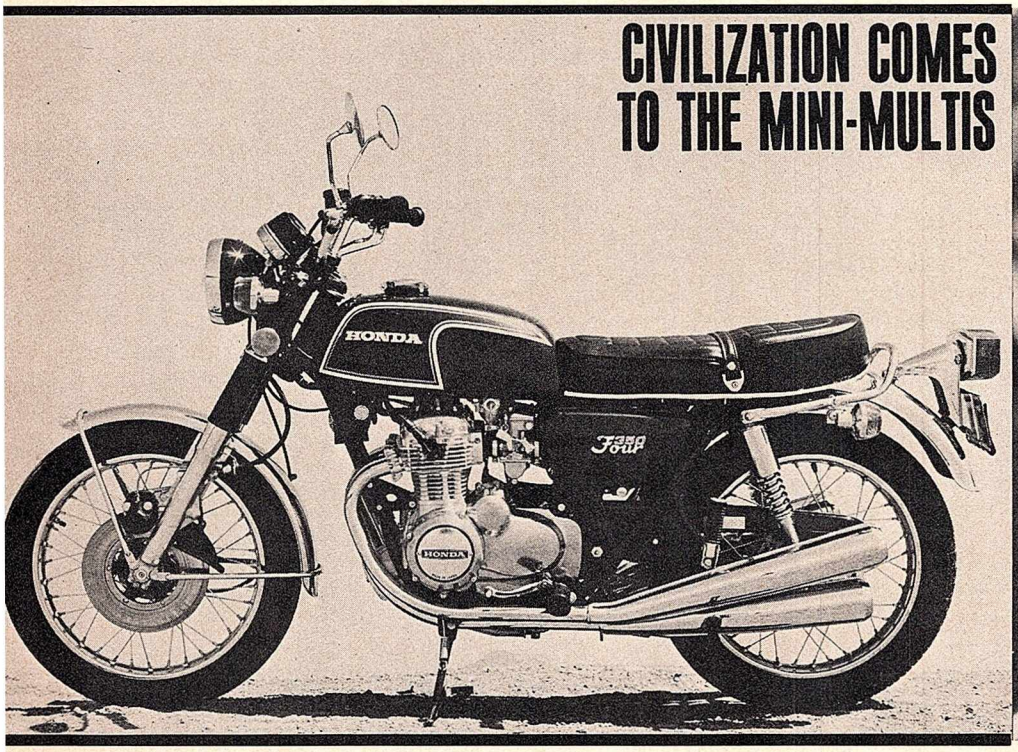
To return to the gearbox for a moment, it is—how should we say—very Honda, and with a pleasant change. Disengagement/engagement can be felt during gear changes; this is not a transmission to be finessed from one cog to the next. But neither is it a gearbox prone to offering up an extra neutral at some inopportune moment. But, the real and bona fide neutral, that one between first and second gears, can be found each and every time it is sought. To long time Honda owners this alone should be worth the price of the motorcycle.

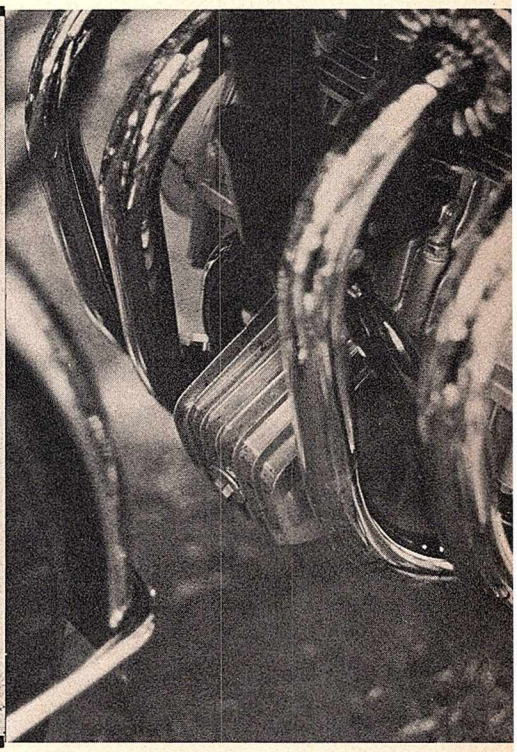
As a design exercise the frame is a little disappointing. A pressed-steel main member picks up a single front down tube at the steering head, and the tube ties into a double cradle at the bottom front of the engine. The cradle continues back and up at the rear of the transmission to become the diagonals for the rear sub-frame. The top sub-frame struts and the two center vertical members tie into the backbone box just aft of the cylinder head. Gusseting is generous and the welds are textbook perfect. Aesthetically it would be nice to see a true, all-tube double cradle, but we'd be hard pressed to come up with a practical reason for such a change; the 350/Four's main frame is apparently flex free. Snaking and twisting are nonexistent during hard cornering on very rough surfaces.

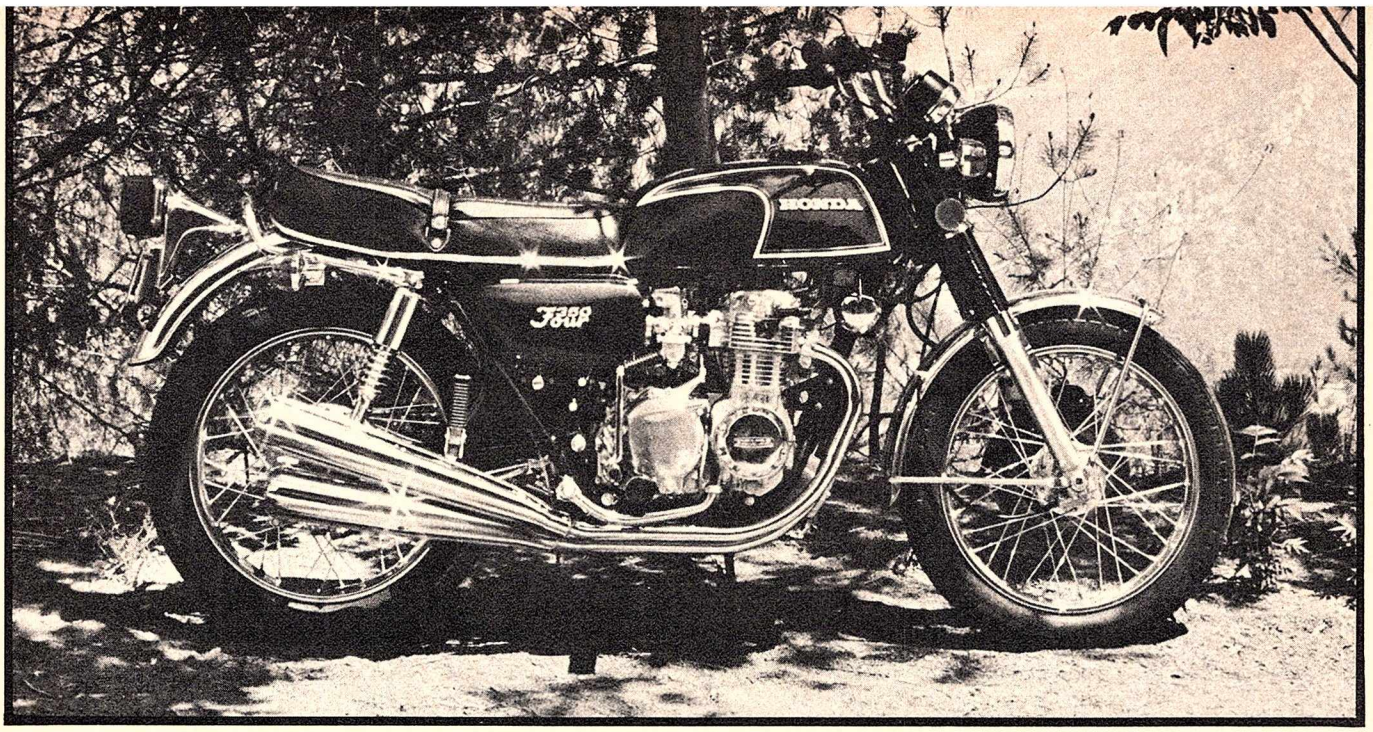
Suspension, both front and rear, is decidedly stiff. The front can be lived with, but the rear struts are completely comfortable only when there is a passenger aboard. The stiffness conspires with the inadequate damping to make the rear units less than satisfactory.

Despite suspension shortcomings the 350/Four is a stable, firm-handling piece that can be confidently hustled along twisty roads with much good fun. Handling is good at all speeds. It has less top hamper than might be expected, even with a full fuel load, and can be comfortably threaded through city traffic. It's interesting to contemplate what a really good set of rear spring/shocks and removal of the center stand would do for the 350/Four's potentially excellent high-speed handling. (The center stand is wont to ground itself when the motorcycle is heeled well over to the left, but the possibilities for a remedy seem good.)

CIVILIZATION COMES TO THE MINI-MULTIS



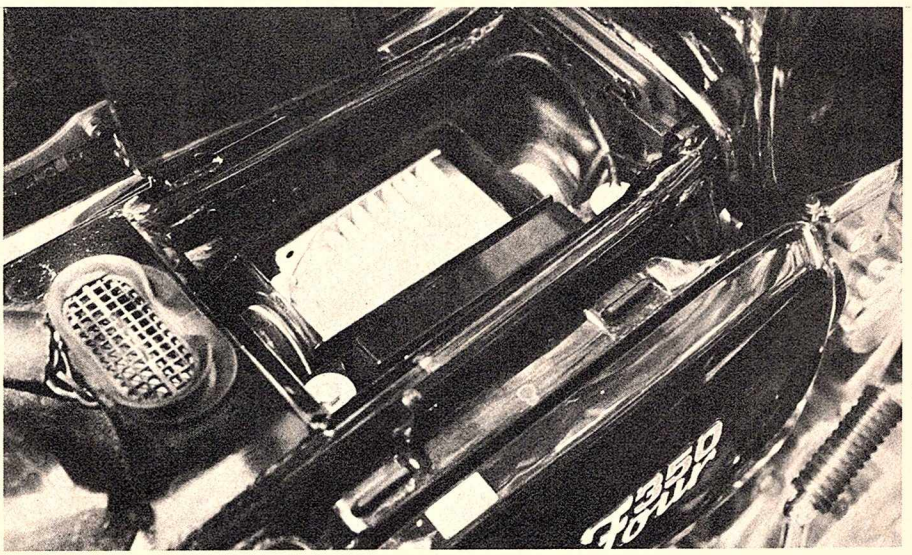


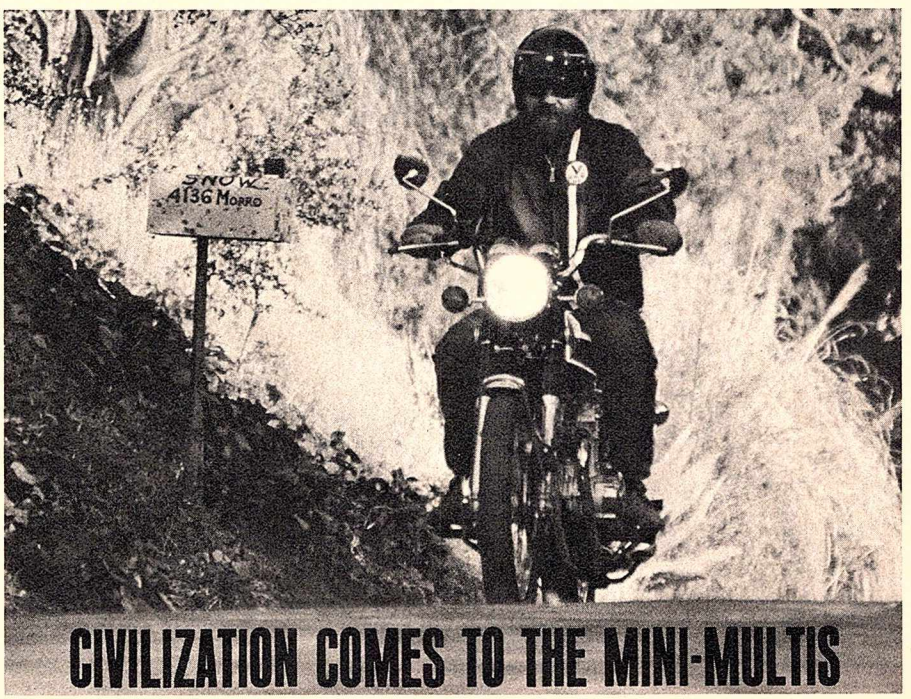


The brakes offer a wide margin of performance. The rear drum-type is almost too robust and has a tendency to take advantage of the engine's lack of pronounced flywheel effect. Judicious use of the rear brake, along with increased reliance on the excellent front disc, provide an extremely powerful and safe braking system that would nicely accommodate a larger, faster motorcycle. The front brake has been given a thoughtful civilizing touch; a lightweight fender shrouds the rear of the disc to prevent it from throwing water onto the left side of the rider and the machine. Passenger sanitation has also been considered resulting in an effective oil shield fitted to the rear wheel sprocket.

The control/seat/pegs relationship is very good. Vital levers, switches and indicators need never be hunted for, and everything works as it should.

Careful examination of the 350/Four reveals an attention to detail that other manufacturers would do well to emulate. Nowhere is the use of proprietary components obvious; every bit and piece on the 350/Four looks as though it was designed and built solely for this motorcycle. Taking into account our criticisms, its less than spectacular acceleration, and its higher than average price for its displacement class, the Honda 350/Four is still one of the best dollar values in transportation motorcycles. ●





CIVILIZATION COMES TO THE MINI-MULTIS

MAKE HONDA
MODEL 350 FOUR
PRICE AS TESTED $1,095.00
MAXIMUM SPEED AS GEARED 101 mph
WEIGHT 411 lbs. WET: Fuel Tank Full

Distributor .... AMERICAN HONDA MOTOR CO. INC.
100 West Alondra Blvd. ..... Gardena, Calif. 90247

ENGINE

Engine Type	4-CYLINDER, OHC
Bore	47mm
Stroke	50mm
Displacement	347cc
Compression Ratio	9.3:1
B.H.P. at R.P.M.	N.A.
Carburetor	(4) 20mm KEIHIN
Ignition	BATTERY/COIL
Starting System	ELECTRIC/KICK
Lubricating System	PRESSURE

FUEL AND OIL

Oil Capacity	3.7 QUARTS
Oil Recommended	10/40W
Fuel Capacity	3.2 GALLONS
Fuel Recommended	91 OCTANE
Approximate mpg	50

FILTERING SYSTEMS

Air	PAPER
Oil	PAPER CARTRIDGE
Fuel	SCREEN

FRAME

Frame Type	SEMI-DOUBLE CRADLE
Weight Distribution	FRONT: 49%, REAR: 51%
Wheelbase	53.3 INCHES
Ground Clearance	6.1 INCHES
Peg Height	11.8 INCHES
Seat Height	30.7 INCHES
Handlebar Width	39 INCHES

SUSPENSION-TYPE

Front	TELESCOPIC FORK
Rear	SWING ARM

SUSPENSION-TRAVEL

Front	4.5 INCHES
Rear	3.6 INCHES

DRIVE TRAIN

Clutch Type	MULTI-DISC, WET
Primary Drive	HYVO-TYPE CHAIN (3.423:1)
Countershaft Sprocket	17 TEETH
Final Sprocket	38 TEETH
Final Drive	SINGLE ROW CHAIN (2.235:1)

Gear Ratios	Internal	Overall
1st	2.733:1	15.463:1
2nd	1.850:1	10.467:1
3rd	1.416:1	8.011:1
4th	1.148:1	6.495:1
5th	0.965:1	5.459:1

TIRES AND WHEELS

Front	3.00x18 BRIDGESTONE
Rear	3.50x18 BRIDGESTONE

IMPRESSIONS

	Poor	Good	Excellent
Throttle Response			●
Acceleration		●	
Power Band		●	
Starting			●
Engine Noise		●	
Muffling		83Db(A)	
Vibration		●	
Handling			●
Choice of Tires		●	
Suspension		●	
Rider Comfort			●
Transmission			●
Instrumentation			●
Lighting			●
Toolkit		●	
Paint and Chrome			●
Styling			●
Mileage		●	
Braking			●

UP ON THE PEGS

(Text continued from page 16)

us 100% in the desert. Now Nevada looks a little better.

Trouble is, Nevada isn't Penton's backyard. There's another underlying demon lurking about this Berkshire selection, it has to do with the heretofore outlaw AMA District 1. This New England area told the AMA they didn't need them several years ago and went on to do many great things; the Pepperill Motocross GP, the North-South races, the Canadian-American Challenge races, plus the aforementioned Berkshire, without AMA Sanction or blessing.

Then, in May of 1972, there was a last minute endorsement by the AMA given to the Berkshire, and it was included as a Six Days qualifier. All they asked was that each contestant belong to the AMA.

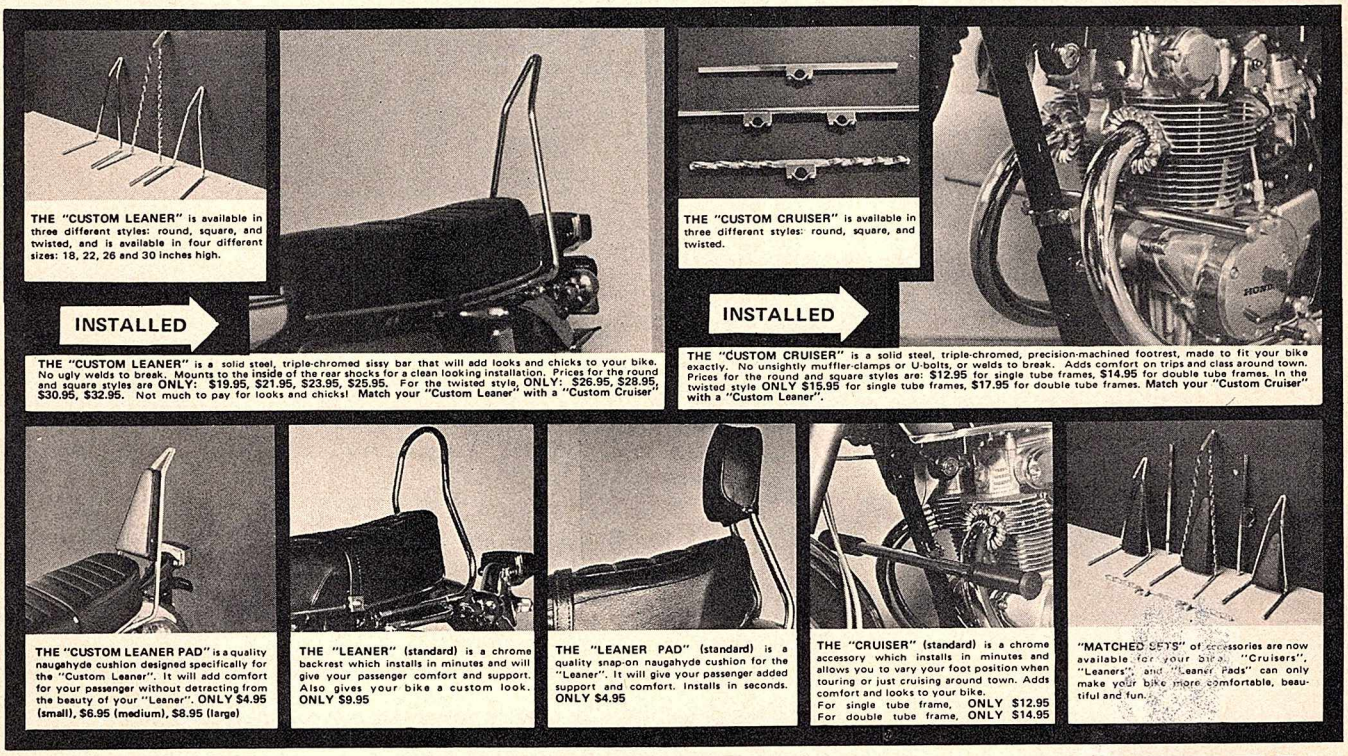
BAJA 500

In my opinion the Baja 500 is always worth prime space, unfortunately we haven't got it to give. Surprise was the key word for the 500 this year as Silverthorn and Fetty got 'em with a 325cc (or there abouts), stroked Honda XL. The thing was built in the R & D facility near Tokyo, and, besides the big engine, it had another inch added to the swing arm and a pair of really nasty looking rear shocks. Both riders said the bike handled great and went like a rocket . . . would you believe 110 mph on the pavement? A great kickoff for Honda's new XL-250 single. Who said 4-strokes are dead?

Motorcycling's favorite car racer Bobby Ferro was responsible for the other surprise when he took his single-seater dune buggy from the 293rd starting position and ended up winning the race overall. It was a repeat win for Ferro and Silverthorn/Fetty, a double repeat is another first for the NORRA record books.

Starting positions are very important in these NORRA races, the farther up front you are, the fewer cars you have to pass. Also, the earlier you start, the more daylight you have to run in. The winner is figured by elapsed time taken from the time he starts, but having a clear field and daylight helps. Starting positions are drawn, trouble is teams such as the Stroppe group draw as many as 10 numbers and give the lowest drawn position to their fastest car. Parnelli has always been among the first dozen cars to start these off-road events. But Ferro, who learned the off-road game on a 40 cubic-inch Triumph, did the impossible and won it anyway. He was in such a hurry that at one point he left the pits minus his oil dip stick, the mechanic didn't have time to put it back in. Congratulations Bobby on another fine victory! •

ATTENTION HONDA OWNERS


THE "CUSTOM LEANER" is available in three different styles: round, square, and twisted, and is available in four different sizes: 18, 22, 26 and 30 inches high.
INSTALLED
THE "CUSTOM LEANER" is a solid steel, triple-chromed sissy bar that will add looks and chicks to your bike. No ugly welds to break. Mounts to the inside of the rear shocks for a clean looking installation. Prices for the round and square styles are ONLY: $19.95, $21.95, $23.95, $25.95. For the twisted style, ONLY: $26.95, $28.95, $30.95, $32.95. Not much to pay for looks and chicks! Match your "Custom Leaner" with a "Custom Cruiser".
THE "CUSTOM CRUISER" is available in three different styles: round, square, and twisted.
INSTALLED
THE "CUSTOM CRUISER" is a solid steel, triple-chromed, precision-machined footrest, made to fit your bike exactly. No unsightly muffler-clamps or U-bolts, or welds to break. Adds comfort on trips and class around town. Prices for the round and square styles are: $12.95 for single tube frames, $14.95 for double tube frames. In the twisted style ONLY $15.95 for single tube frames, $17.95 for double tube frames. Match your "Custom Cruiser" with a "Custom Leaner".
THE "CUSTOM LEANER PAD" is a quality naugahyde cushion designed specifically for the "Custom Leaner". It will add comfort for your passenger without detracting from the beauty of your "Leaner". ONLY $4.95 (small), $6.95 (medium), $8.95 (large)
THE "LEANER" (standard) is a chrome backrest which installs in minutes and will give your passenger comfort and support. Also gives your bike a custom look. ONLY $9.95
THE "LEANER PAD" (standard) is a quality snap-on naugahyde cushion for the "Leaner". It will give your passenger added support and comfort. Installs in seconds. ONLY $4.95
THE "CRUISER" (standard) is a chrome accessory which installs in minutes and allows you to vary your foot position when touring or just cruising around town. Adds comfort and looks to your bike.
For single tube frame, ONLY $12.95
For double tube frame, ONLY $14.95
"MATCHED SETS" of accessories are now available for your bike. "Cruisers", "Leaners", and "Leaner Pads" can only make your bike more comfortable, beautiful and fun.

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GTMA
GT MOTORCYCLE ACCESSORIES

MAIL

(Text continued from page 26)

Gentlemen:

Bart Markel says this is his last year. He has won more Nationals than any other man. Bart still rides a Harley Sprint in the lightweight class. This is one of the last four-strokes to "hang in there" competitively with the two-strokes. The racing Sprint is really an excellent piece of machinery. It is probably one of the most underrated or unnoticed motorcycles going today. Why not do an article on this bike? Ask Bart, the Sprint is a good motorcycle, he has won a lot of races on it and beaten a lot of two-strokes. In fact, when he tied the record of total number of National wins at Santa Fe, Illinois, last year he was riding his Sprint.

I think this would make an interesting story.

Roger Frayre
Lansing, Michigan

Did you ever try to kick-start the kind of Sprint Bart rides? I have. —Ed.

Dear Sirs:

I would like you to know that I enjoy reading your magazine. I was very interested in your test on the Honda XL-250 and your Suzuki hop-ups.

Now, I would like to ask you a question. I have seen tests on the Yamaha DT-2 MX, the 250 CZs, Maicos, and Huskys. I have also seen tests on the Honda XL-250 even before they were out and I would like to know if you are going to do a test on the Suzuki TM250 Champion? I recently purchased a Suzuki TM250 and wish to know your opinion of it. Thank you.

Lester Kawahara
Gardena, Calif.

It was a neat bike! We tested it in the September, 1972 issue.—Ed.

Dear Sirs:

I have been reading your magazine for a while and enjoyed it very much. Most of all is the flat track parts. There is a person who I have been watching for, well, a little while. Dave Sehl is his name, and I think he will soon be one of the best! So why don't you interview him soon, okay? Oh, yes, put in some speedway racing, too.

Wade Hutchison
Waynoka, Oklahoma

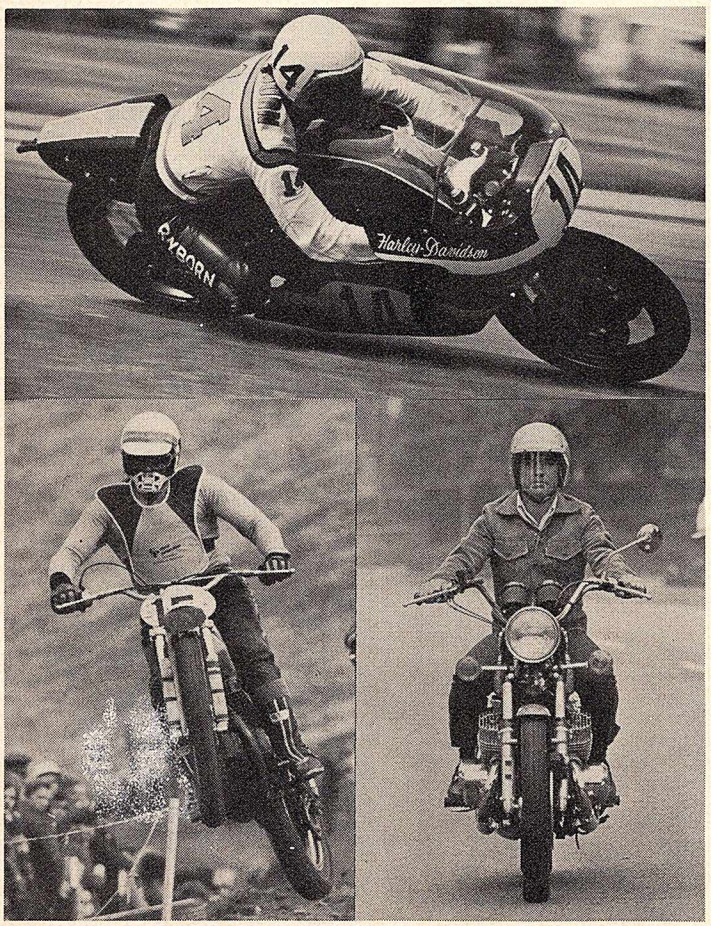
We do speedway racing from time to time, and I must talk to Mr. O'Brien about Dave Sehl. He has a great future in motorcycle racing.—Ed.

Dear Sirs:

I purchased a "Wildcat 5" (model 500) mini-bike a while back and right now I am trying to find a company that makes speedometers for such a bike. Every place I try, I get the same answer. Please help me as I am very desperate. Please send me the company's name and address. Thank you very much.

Tim Honert
East Moline, Illinois

I don't know either.—Ed.



On the track
...in the dirt,
or just around town

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REFLECTIONS

BY JIM WILLIAMSON

The wheels spun deeper into the sand, creating a high, dry, dusty rooster tail behind the little car. The girl's face was puckered with worry and doubt as she glanced around, looking for help. The boy, her passenger, his eyes dulled and staring, as if unable to focus, his head moving from side to side, drooled as he blubbered advice. A half a hundred watched, but didn't move.

"Hey lady, shut it off," a fifteen year-old, long hair, yelled to the coed. He and three others set their Pepsi cans on the ground and casually, cooly, approached the car and opened the door.

"Let me," he said, and she quickly slid out, brushing at her skirt and ignoring the babble of her companion. Skinny muscles rocked the car as long hair shifted the car forward, to reverse, and back. Boy friend's body fell forward and dropped from view. Then the little car spun its way slowly out and back onto the road.

"Gee, thanks!" The young shoulders swaggered as they returned to the Pepsi's. "De nada, senorita," said one without turning around.

FRIDAY NIGHT

"I want your love, baby," he screamed. Twin stereo speakers boomed his taped musical message into the cold night mist. The stereo owners, five boys, weren't listening as they drunkenly wrestled in the sand, within ten feet of the 5,000 decibels. A hundred yards away groups of youngsters sat around small fires and listened to the throbbing rhythm.

At one fire a lad pulled a joint from his shoe. A young girl looked around, a bit scared, then quietly rose and walked across the road.

The mist became a heavy, wet fog, only slightly dimming the roaring speakers. The fires died and the celebrants retired. The music stopped.

"Just one more time," a plaintive voice asked. The face that yelled was forty and drunk. "Damn it, it's three-thirty and the kids are still awake," an angry female voice echoed from the tent, and forty and drunk pulled the flap of the sleeping bag over his head.

SATURDAY MORNING

The fog was gray, quiet, and cold. The body lay only one-half in the sleeping bag, the goose bumps showed like tiny measles through the clinging wet T-shirt. He shivered. The modishly long black curls made a brief swirl in the vomit in which they lay.

From a distance there was an ominous yet disciplined quality about the group. Long forks and sissy bars on four cycles. Simon Levy's rivet pocketed uniforms. Beards, matted hair, morbid fetish symbols on the jackets, and some crotchless pants, identifed the wearer, but he was better recognized by the coarse, profane squealings at passing cars. Like alley dogs, demanding the right to do their thing; bark, fight, and piss against the fire hydrants, the mob moved only in groups from their lair, a local bar. Partially bald pates glistened in the sun, beer built paunches protruded over belts, like battle ribbons, and their pouting fifteen year-old wenches glared angrily at the watching straights. The American, perverted, semi-human, mobile home show had arrived!

The race was late. He was there. Only a few saw from where. The pleasing rumble of a super-bike filled the air. Baroom! The motorcycle leaped forward, the front wheel sat up and held. A wheelie, and a long one. Only a few youngish "Gee'ze" were heard over the big Kawasaki's roar. The rest of the crowd was expectantly quiet. Again, again, and again the monster's nose was lifted into the air. But, no cheers. This wasn't a college football crowd. It was a thirsty crowd and mistakes, twisted motorcycles and bones

THE LAST GRAND PRIX

seemed more to its carnivalish taste. He didn't fall, wobbled, but didn't fall. The crowd became bored and he went away.

An awkward, long nosed, three wheeled funny-bike then did a series of one-foot wheelies, without much crowd interest, and left.

A child on a bicycle wheelied almost the entire road—and fell. Suddenly the crowd cheered and laughed, and laughed again as a wit jumped out at the fallen boy and, emulating the gestures of a baseball umpire, yelled, "You're safe!" Only the boy's pride was hurt. He pushed the bicycle away from his immediate tormentors and mounted his steed for another long wheelie. Nobody cheered.

SATURDAY AFTERNOON

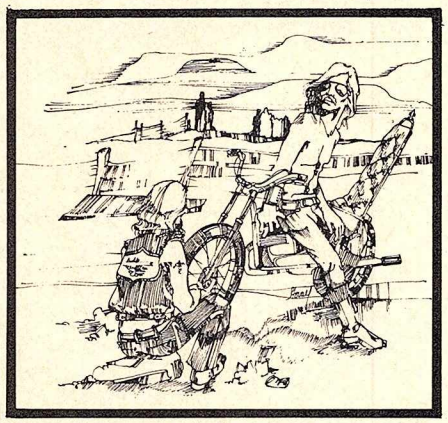
Fifteen years old? A pretty face smudged with dirt. Only a sweat stained and dirty T-shirt and jeans, neither quite hiding or containing large soft breasts and a cute figure. As they walked she very tenderly reached out and touched his neck and then pulled his arm against her breast. "What the hell ya doing?" he angrily spat as he turned to her. "Nothing," she lovingly smiled. "Shit," he said, his pimples smudged with lipstick and colored purple as his sleepy face grew red with anger. He pulled his arm away.

SATURDAY—THE RACE

"You son's o bitches, get the hell outa the street," yelled skinny and fifty from behind the fence. Zoom! Zoom! Motorcycles moving at seventy to eighty miles per hour flashed past the hundreds of spectators squeezing each other into the street, almost closing it. Skinny screamed at everyone but only teenaged and pudgy, who had brazenly edged furthest into the street, turned and glared. Skinny was being heard so he flashed his fist and cursed pudgy, profanely threatening him harm if he didn't move. Pudgy, a leader of two, scowled at skinny and looked knowingly at his compadre. He withdrew a pocket knife, opened the blade, and shoved it out of sight under his belt. Nervously and yet dangerously he awaited skinny's approach. Skinny apparently was all mouth or smarter than he sounded, because he vanished. After many anxious minutes pudgy noticed that others were staring at him. He removed the knife, closed the blade, and after glaring at this audience, moved back into the street. Skinny would have had help!

SUNDAY—THE RACE

The sun angrily baked the rocks as the thick, swirling dust stood in the way, not quite hiding the mean, deep whoop-de-doos. The motorcycle roared and ebbed, and roared, and then died. The arms trembled. He gulped air as sweat dropped on the tank. His arms slowly folded and the helmeted head dropped to the handlebar as if it were a pillow.



The legs spread wide to hold the dead tired two-stroke on its treads. Baroom! Baroom! Through the dust the sound ran. The head raised —and as the approaching rider became a shadow it lifted quickly from the handlebar. The right foot kissed the kickstarter as the right wrist brought the dead back to life. A flick of the toe caused the rear wheel to spit sand at the enemy and the steed leaped forward again. The race was not over!

SUNDAY—AFTER THE RACE

Looking like a grotesque clown in black and white make-up, the man's face sagged, the body spent. Sweat crusted dirt surrounded the heavy lidded eyes and mouth, the exhaustion was as evident as a strong odor. "How many laps, buddy?" The face wrinkled like a mummy as if about to speak, but slowly the hands moved from the knees and held up nine fingers. "Hey, that's great! Nine laps out of ten at the Grand Prix. That will be something to talk about." Minute specks of dust fell from the corners of the mouth as a trace of a smile appeared. His shoulder lifted in response to his woman's hand. Her smile thanked the visitor and crowned her man.

SUNDAY—LEAVING TOWN

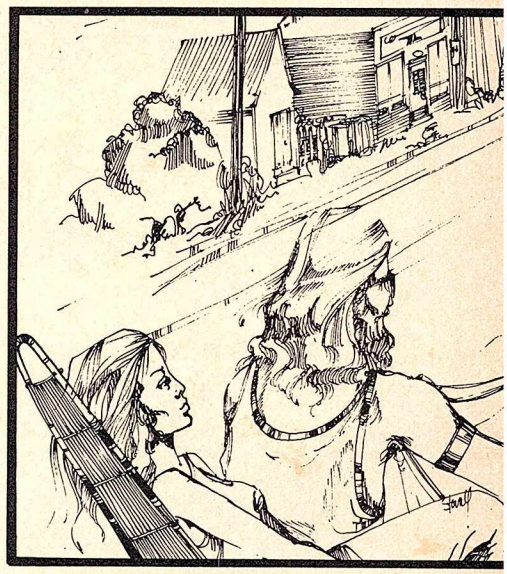
Debris littered every foot of the town and scarred it, like social shrapnel. Drunks watched gigglingly as a tipsy black child gathered the few nuggets, aluminum cans, and placed them in a sack. A woman sold slices of watermelon from an ancient table in the street. Two outlaw bikers sipped drunkenly from a paper wrapped bottle as they lay in the doorway of a business.

His uniform too large, his wrinkles filled with sweaty dust, the aged security officer could still offer a smile to the tired people as he directed their cars out of the town. There was little noise above that of car engines as they drove through the carnage.

SUNDAY—GOING HOME

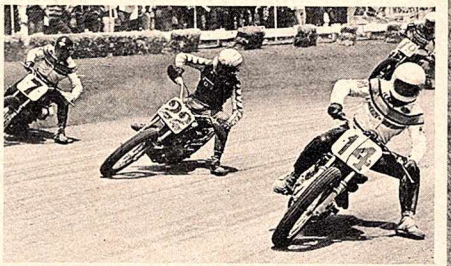
The air hung hot. The truck engine chugged and sputtered. Five miles per hour was too slow. Sweaty, tired thousands were most patient and polite, but the impatient and gross displayed their class. Crowding, passing over the center lane, over into opposing lanes, passing on the right shoulder, they passed the multitudes and failed the test of maturity.

The motorcyclist and his equal were apparent among the thousands by the bewildered expression as they attempted to respond to their discipline. No trash cans, bags, or boxes were available. They had developed a pride which precluded their being responsible for defiling our land. They had even cleaned the areas fouled by the uninitiated and the ignorant to display their intent and direction. But here they were denied the opportunity to reflect credibly. To the quiet people of the community we can only offer that the race participant and crew, possibly, 5,000 of the 150,000, did not consciously contribute to conditions during or after the race. This race will not die, it was killed! ●



NATIONAL MILE COLUMBUS

Romero, Mann, and Rayborn (L to R), inspect the track in formation.



Mert Lawwill zips by Terry Dorsch (22), and Cal Rayborn (14), in their heat race.

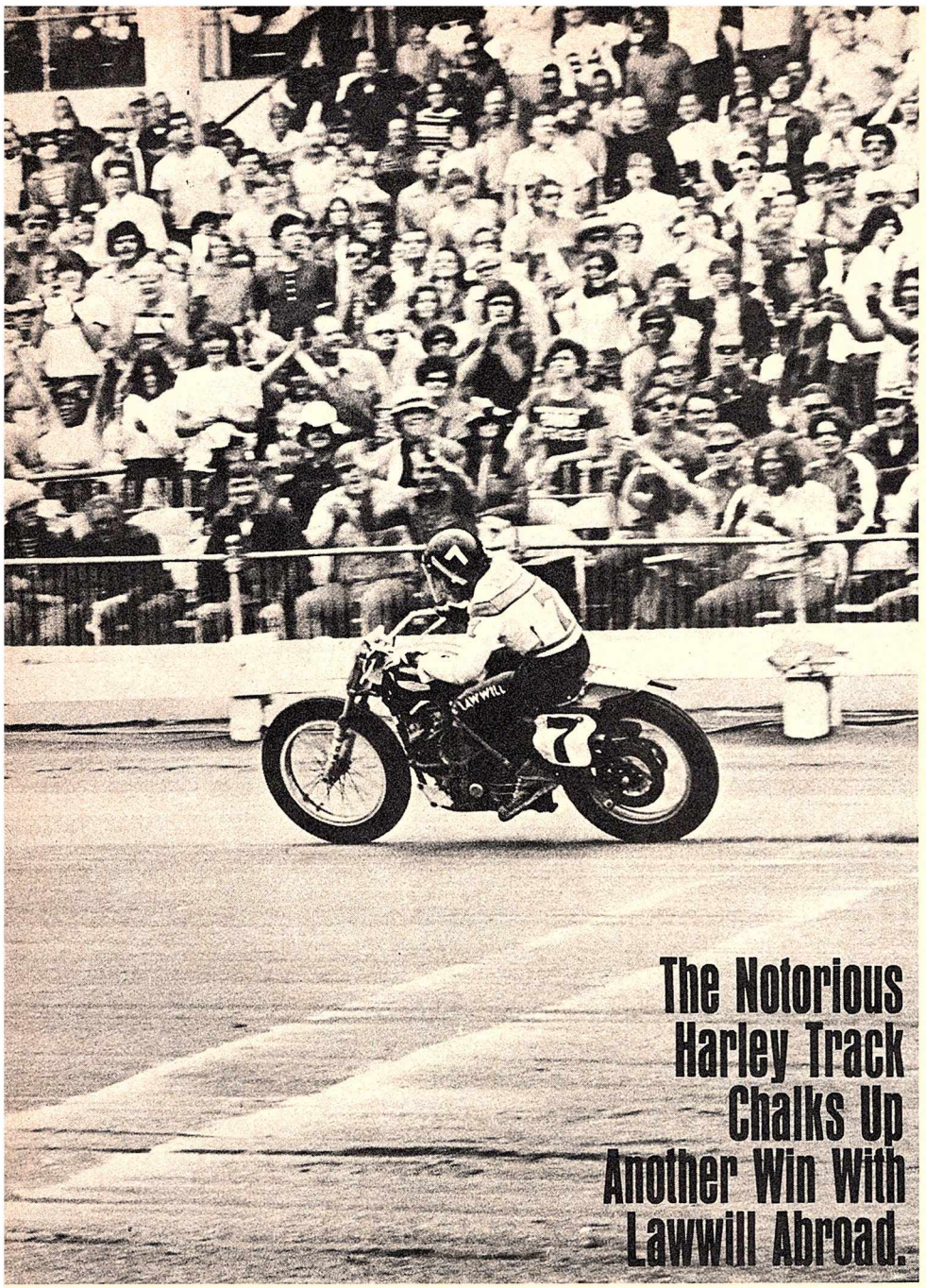
It's been a long time since Mert Lawwill had a national victory. His last one came two seasons ago, when he carried the Number One plate. Some, possibly Mert himself, felt that the number six that he was issued last year carried bad luck for him; he fell off nearly as many times in 1971 as he had in all the rest of his career. But the half-mile at the Columbus, Ohio, state fairgrounds was a track that Mert liked, and it liked him. It had allowed him to conquer his foes at the National two years ago.

The Charity Newsies, as the race has been called since 1953, has always had the reputation of a tough

Juniors Mike Johnson (94E), and Jim Crenshaw (21Y), are shadowed by Jim Rawls (41N), eventual winner.

Report and photos by Dan Mahony

Mert appears to be fully recovered from his stroke of bad luck.

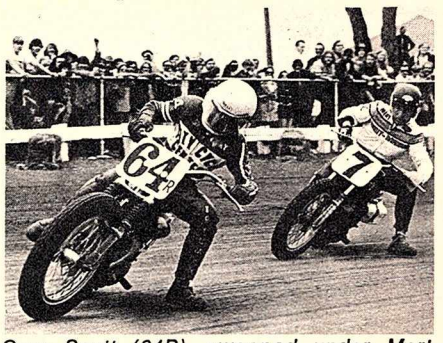


The Notorious Harley Track Chalks Up Another Win With Lawwill Abroad.

This enthusiastic crowd cheers for Lawwill as he crosses the finish line.

track. The surface constantly changes throughout the day, a quality that has pit crews changing tires and gearing, and riders changing riding styles and lines through the corners all day long. In the past years the track has traditionally gone from a loose slidey cushion early in the day to a hard blue groove against the inside rail by Main Event time. This year was no exception, only that the groove was about a third of the way to the outside wall. This "larger corner" made for some pretty quick lap times and some broken records through the day. Harley teamster Dave Sehl led things off by lowering his own one-lap record to 26.15 seconds.

The partisan Harley-Davidson crowd came to its feet as Sehl led the first heat into the turn on what was notoriously a Harley track (the Milwaukee brand has only lost three times in 19 years of running here). Midway through the race, however, National Number One, Dick Mann, aboard his trusty factory BSA, swooped around second place John Hateley and Sehl on the outside to run away with the win. Taking advantage of Sehl's surprise, Hateley took him on



Gary Scott (64R), swooped under Mert in turn three on lap nine.

the inside to grab back second spot. Sehl hung on for third, just holding back his younger brother Doug Sehl.

First year Expert Gary Scott keeps surprising people everywhere he rides, and Ohio isn't any different. After turning in the second fastest time trial, Scott took his heat race easily, even though it was some six seconds slower than the previous ten lapper. In second position for awhile was Scott's nemesis, Kenny Roberts, but he had Harley pressure and dropped his Yamaha back to fourth spot behind Mert Lawwill and Cal Rayborn.

Last years' Grand National Champ, Gene Romero, had to work

Winner Lawwill is happy. Second and third place . . . well?

David Aldana rode last year's BSA instead of the Norton he's been on all season.

his way up from seventh to win the fastest Expert heat of the day, and the best race of the three. Local boy Larry Darr, National number 94, led the first lap followed by a mad pack that included Dave Aldana, Frank Gillespie, Rex Beauchamp, and Tom Rockwood. On lap two Beauchamp took over for the next six go-rounds as Darr dropped back to fourth. As Aldana was steadily working his way backward, Romero was moving up front, and by the ninth lap Romero and Gillespie both passed Rex to earn

Frank Gillespie tucked in to sixth place, Norton mounted.
John Hateley holds a slim lead over Doug Sehl in their heat race.

their places in the Final.

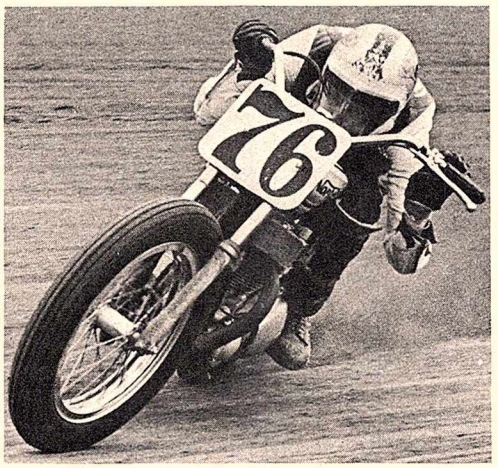
Ohio farmer Larry Darr took the talent-loaded Semi, but perhaps the closest race of the day was for the final two empty Main Event spaces between the Yamahas of Ken Roberts and Chuck Palmgren, and the Triumphs of Don Castro and Tom Rockwood. All four were running side by side until lap seven when Rockwood got off hard and spread everybody out. He got up unhurt as Palmgren and Castro took second and third leaving Roberts and Mark Brelsford, the two National point leaders, to sit and watch.

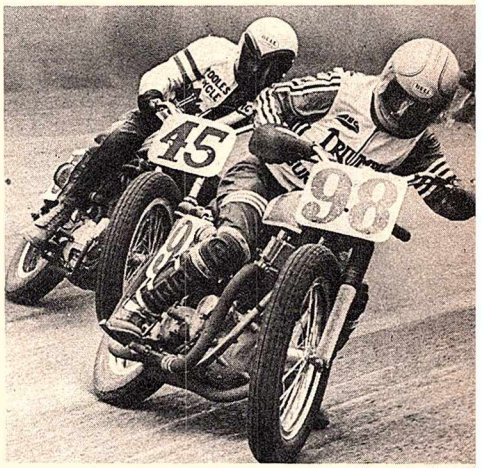
No one but Lawwill knows how he got such a good start, but he did, and at the end of the first lap of the National Final he had a lead of about 50 yards. Romero had jetted into sec-

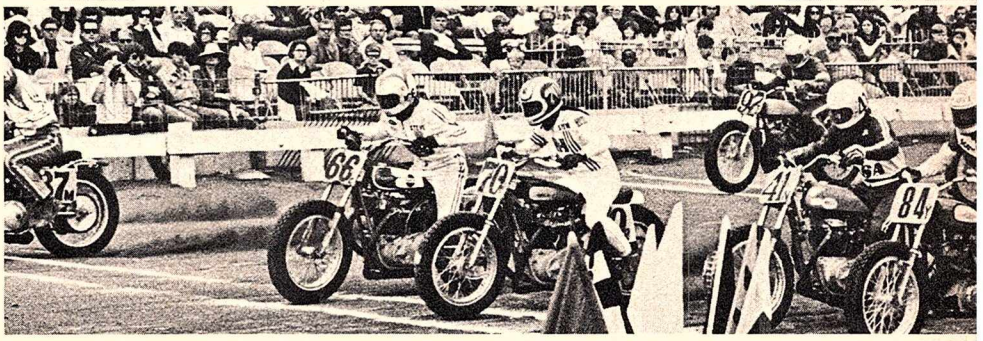
First start of the Junior Final. Steve Nichols (70R), didn't make it to the restart.
First place Junior Rawls and second place Steve Droste.

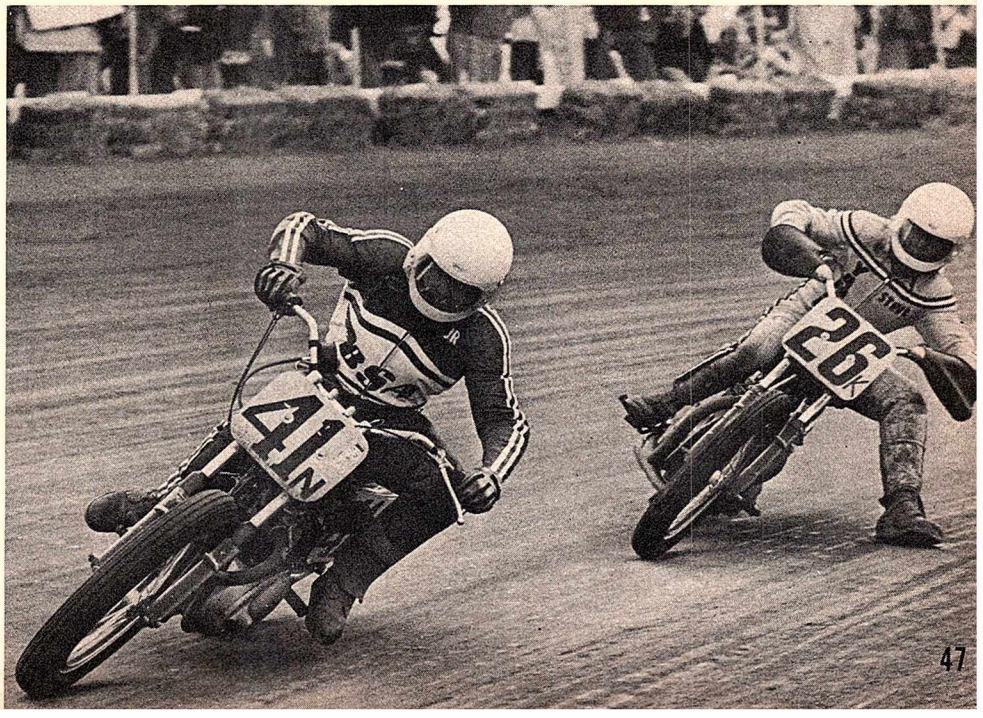
ond only to be passed by Scott by lap three, Hateley lost his clutch and was out of it on lap four. Lawwill continued to stretch his lead over everyone but Scott, who, being down on horsepower a bit, was riding a hell of a race on his privately entered Triumph. Scott pushed Lawwill pretty hard for several laps, waiting for a mistake, and on lap nine, Mert made it and Scott stuffed his way into the area where no one had been riding, under the slick groove, and put Lawwill back in second. Now it was Mert's turn to put on the pressure, and four laps from the finish he went around Scott on the outside, wide open and sideways in the loose stuff,

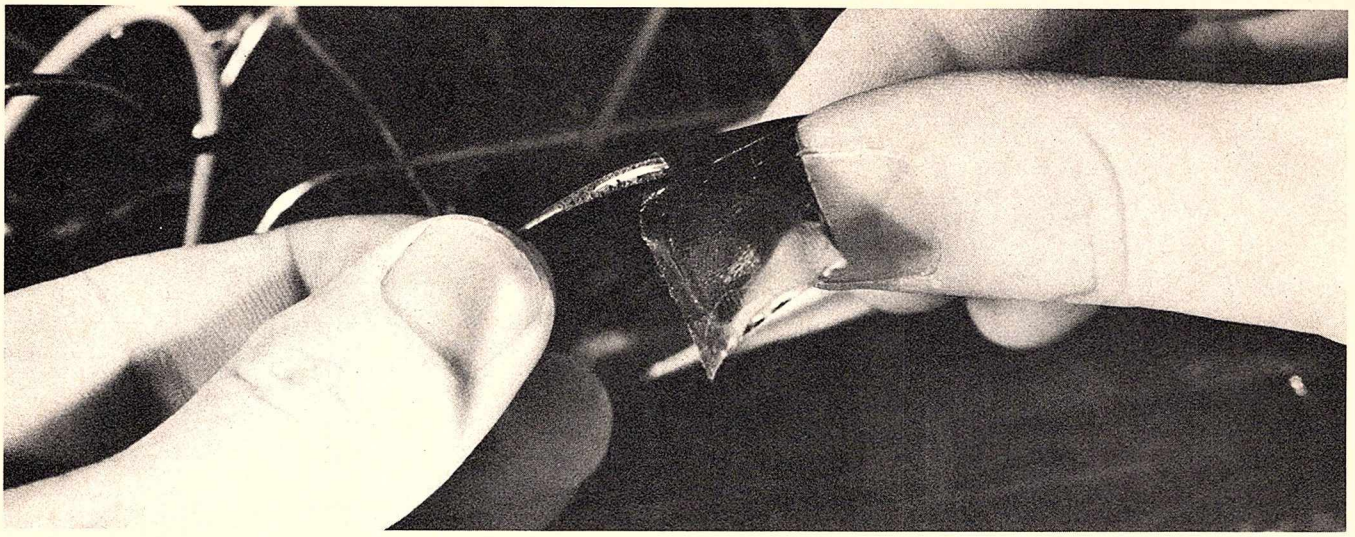
(Text continued on page 56)











GOLLY GEE, MR. SCIENCE:

Wherein the Mysteries of the Previous Episode Find Practical Application.

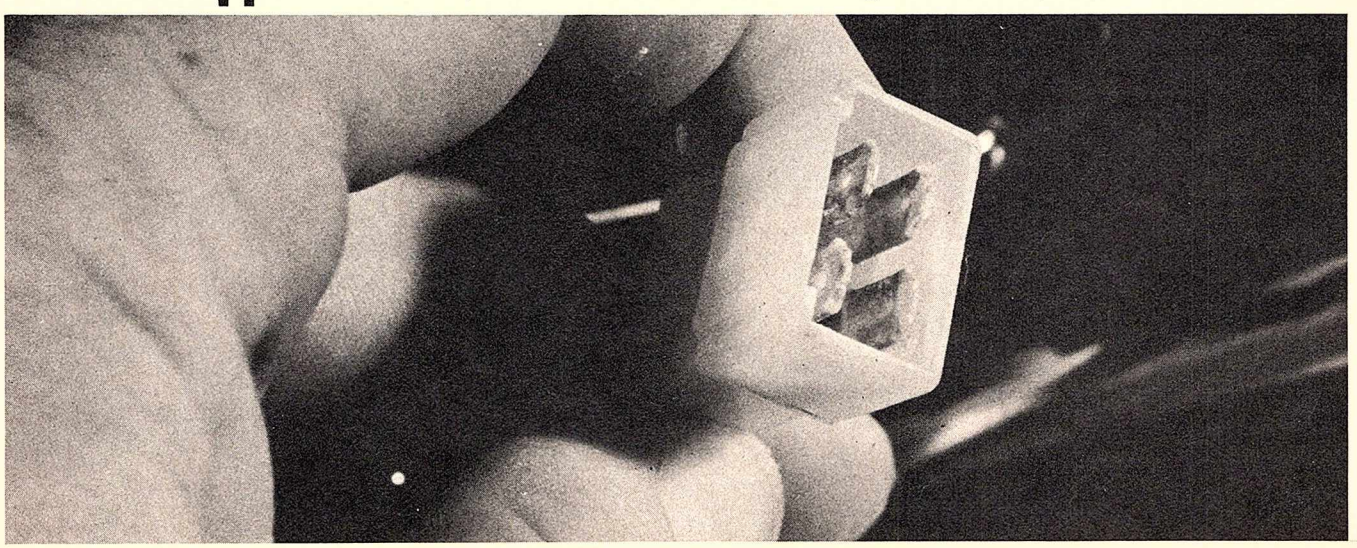
PART 2

Last month *Modern Cycle* presented Part 1 of "Golly Gee, Mr. Science." In it we discussed the basics of electricity—what it is, how it's produced, how it moves, and how it relates to common electrical components. This month, armed with the basics, we're ready to move on into some of the more practical aspects of electrical components and functions and discover how a little care up front can keep a motorcycle out of the shop.

When electrical components are connected to one another they become part of a circuit. The circuit is the basis for the electrical system. Very simply, a circuit is a continuous path between negatively and positively charged poles, along which electricity can flow. There are two basic circuit types, both of which are found on most motorcycles. The series circuit has components connected end to end. It has a single current path. Current must flow through

Suspect the worst and look for the obvious. Chafed wiring insulation is potential disaster. At best it will cost a battery charge, or fuse, or bulb. At worst it will cost you your motorcycle with a thorough toasting. When chafes are located first remedy the cause; secure the wire so that it won't chafe, or reroute it. Then, reinsulate the wire with electrical tape.

Periodically, check all of your connectors. Pull them apart and look for corrosion. If you treat your bike to occasional quarter-car-wash baths connector checks are even more important; the alkaline in the detergent used in these car washes encourages corrosion on connector terminals at a furious rate. What may appear to be a good connection may also be loaded with high-resistance corrosion that virtually stops current flow.



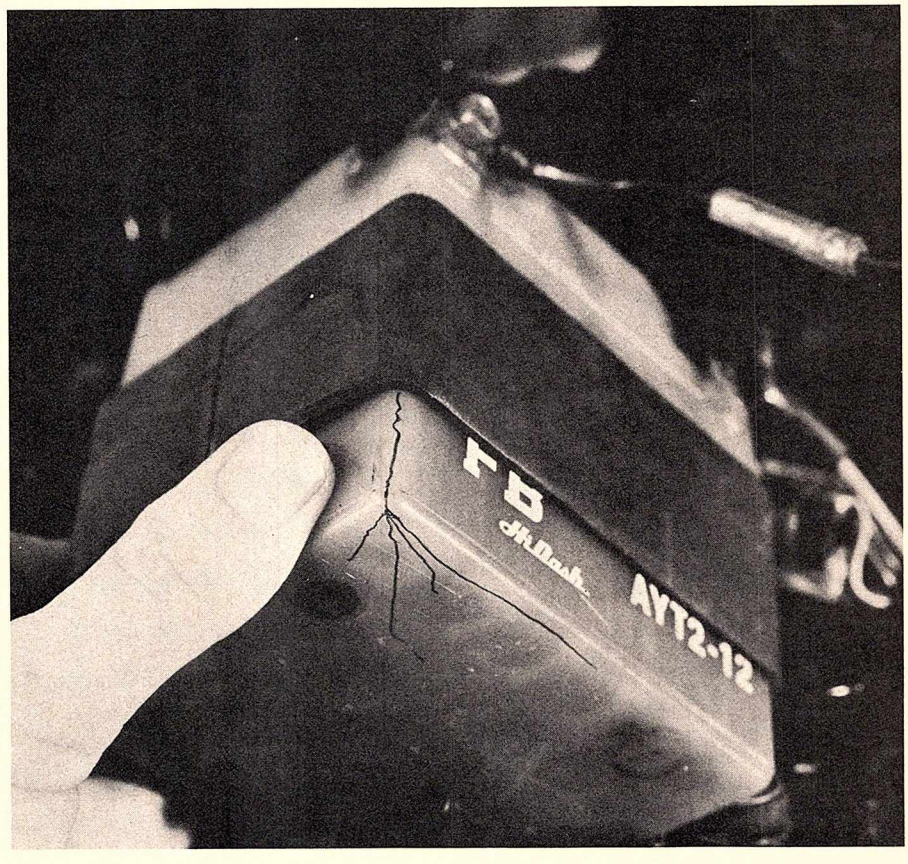
Poor old battery really takes it in the neck—and the back, and the bottom. Check your battery for sulfation—sediment-like deposits in the bottom of the case. You can't do anything about sulfation, no matter what some "experts" might say. Just keep the electrolyte level up to where it should be and don't let the battery's charge drop way down. You won't be able to save a sulfated battery, but you can prolong its life. Once sulfation is apparent, however, be prepared to pop for a new battery in the near future.

one component to the next in a series circuit; if the current is interrupted in one component it will cease to flow on to the next and throughout the circuit.

Components in a parallel circuit are connected side by side. A parallel circuit may have many current paths, and the operation of one component is not necessarily dependent upon the operation of other components.

Whatever the circuit type, it must have three things to operate. It must have voltage, resistance, and be capable of flowing current. Commonly the voltage for a circuit is supplied by a generator or a battery. The resistance is supplied by the components themselves. For example, the filament in a headlight bulb has a controlled resistance which causes it to heat and thus glow. A circuit's ability to flow current is determined by whether or not it provides a continuous path, from negative to positive and back again.

Each of these characteristics has an influence on the operation and performance of any electrical circuit or system. Understanding that all must be present, in correct, prescribed values, makes the business of servicing electrical systems much easier. Armed with this new-found knowledge, let's take a practical look at some things that can, and do, go wrong in electrical systems, along with



While you're checking your battery also take a look at its shock pads. Not only are these pads necessary to absorb vibrations and pounding that might otherwise fracture the battery case, but they are also necessary to maintain the proper relationship of the battery to its holder. Check the pads, and if they seem beat down replace them. Many times a so-called electrical problem has really been the fault of a compressed shock pad which permitted the battery terminals to come in contact with the battery holder.

preventative maintenance and corrective action.

THE ONCE-A-MONTH ONCE-OVER

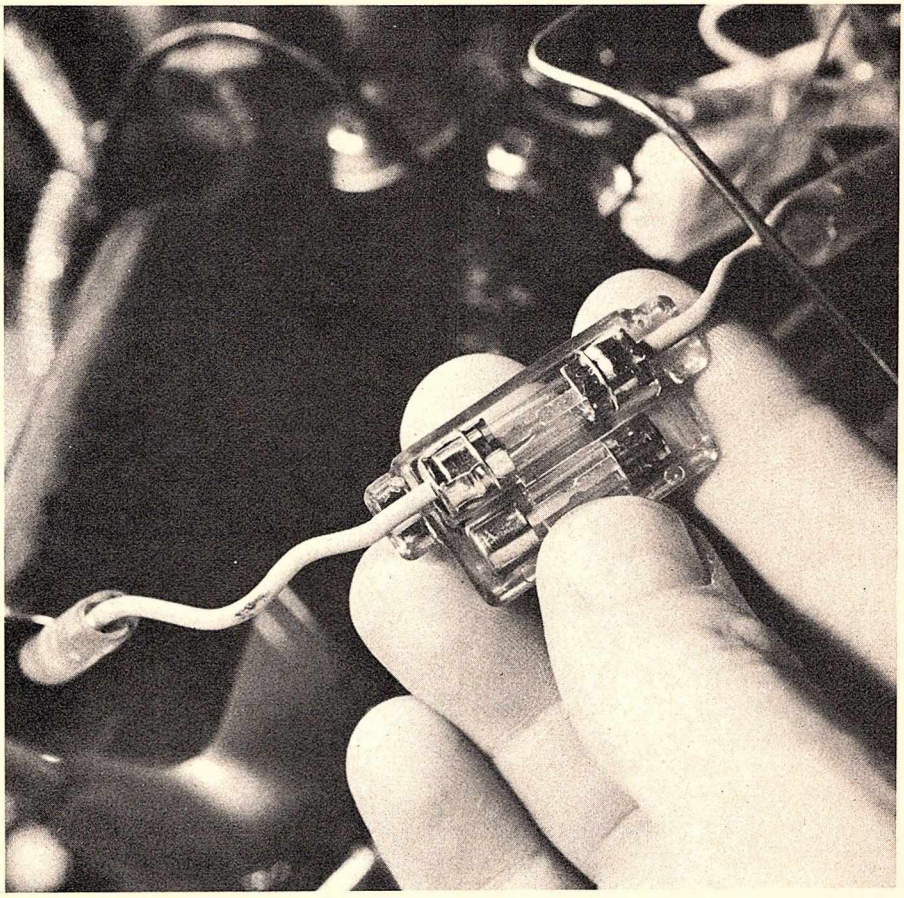
Many of the really rotten things that can happen to an electrical system can be prevented by what service professionals call "preventative maintenance." The term is self-explanatory. Your part in carrying it out is simple; periodically, say once a month, check your entire electrical system from one end to the other. Check the battery for cracks, or sulfation—both internally and externally. Inspect every connection to make sure they're tight and insulated from other connections or bare metal.

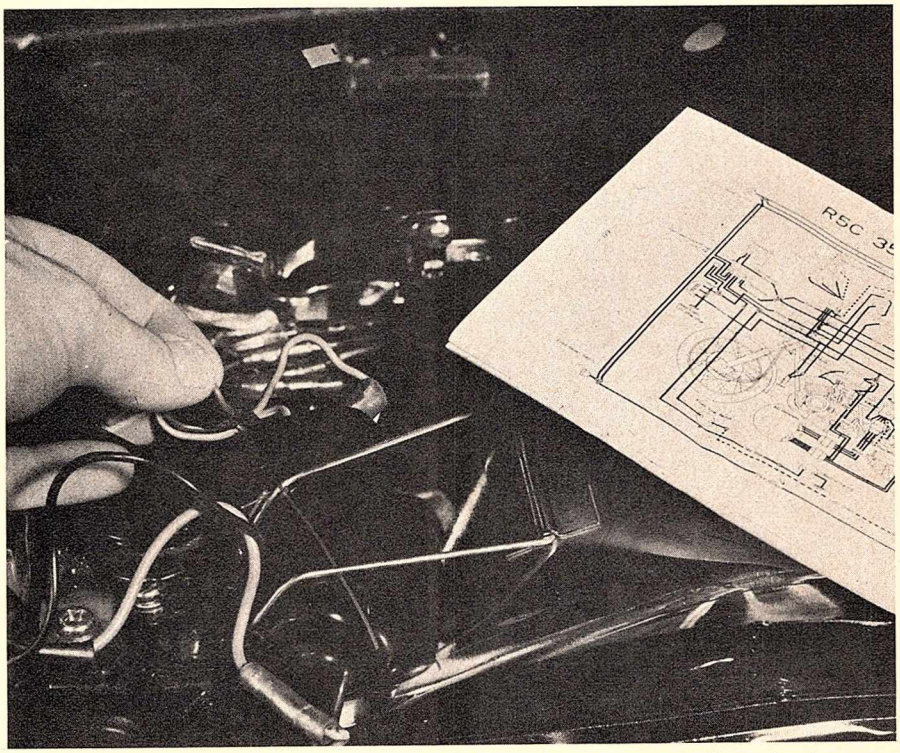
Look at every inch of wire in the lighting and control looms; here you'll be looking for chafed and burned insulation. Check your fuses and make sure you have a replacement for each amperage rating. In general, make sure that the electrical system "looks right"; at times unseen failures are responsible for electrical trouble, but more often than not the culprit is something that is visibly wrong.

There may be instances when the trouble is not visible, where everything appears to be correct but still, electrical trouble exists. Unfortunately, preventative maintenance won't take care of everything. Strange things occasionally conspire to knock out a generator, or a battery or voltage regulator. These difficulties are difficult to diagnose and are best left to the experts in your local dealership. All you can hope to do at this point is offer an accurate description of the symptoms, along with a brief rundown of your own checkout and findings.

Get to know your motorcycle, intimately. Again, the best way to do this is through a periodic checkout of the entire electrical system. Remember that a circuit must have voltage, correct resistance, and a path for current flow. Study the pictorial hints presented here and apply the principles to your own machine. The value of preventative maintenance is tough to assess, but we're willing to bet you'll have fewer electrical problems from now on. ●

If a 20-amp fuse blows do not replace it with a 30-amp fuse. Fuses are an electrical system's safety valve; if heat-producing amperage is too high a correctly matched 20-cent fuse will sacrifice itself rather than pass the trouble on to a $25 wiring loom (not to mention labor for rewiring). When a fuse blows it's a sign of trouble somewhere in the circuit to which it's connected; check the wiring for shorts and correct them before replacing the fuse.





Familiarize yourself with the electrical diagrams in your Owner's Manual and with the color coding and location of wires and components on the motorcycle itself. This will give you a good opportunity for doing your first checkout and can help you work out a routine for future inspections. Follow each wire from its origin, along its entire length, to its termination point.

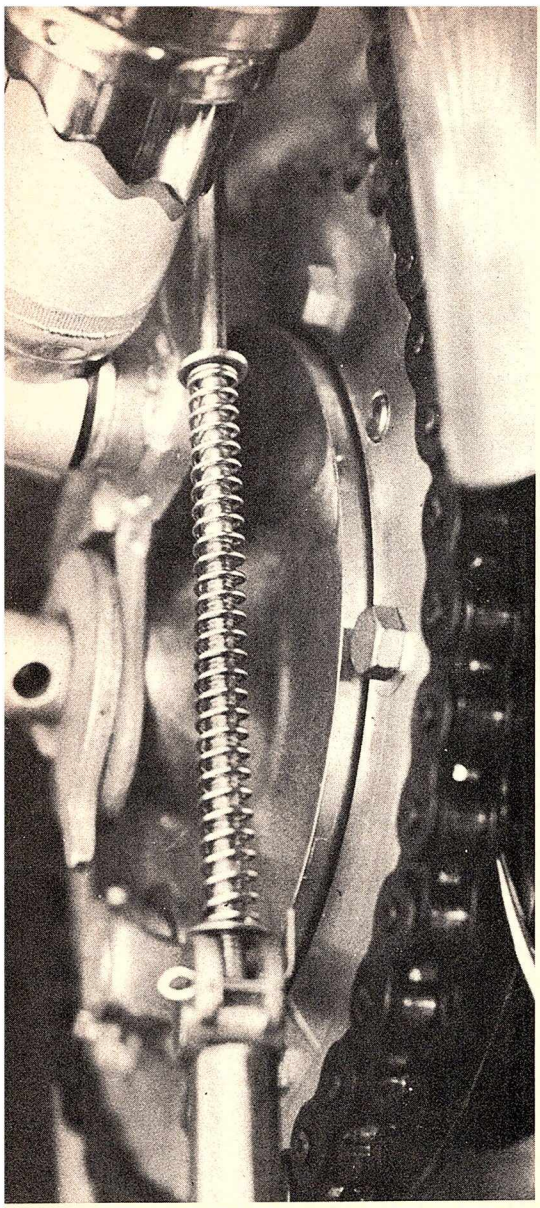
TEST: THE 1973 BULTACO ALPINA

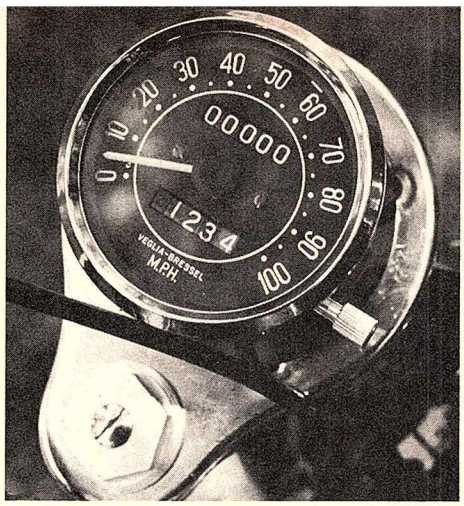
A SECOND LOOK AT THE MACHINE MODERN CYCLE UNVEILED A YEAR AGO.

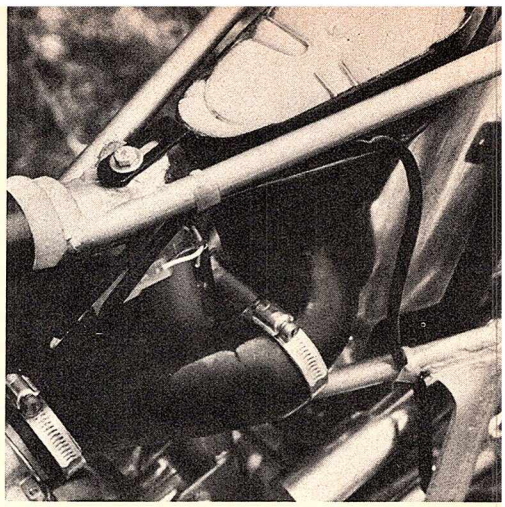
Just one year ago *Modern Cycle* was privileged to be the first motorcycle publication to test the newly-created Bultaco Alpina. We praised it highly, and justly so because you see, where there is a need, and that need is fulfilled, somebody did something right.

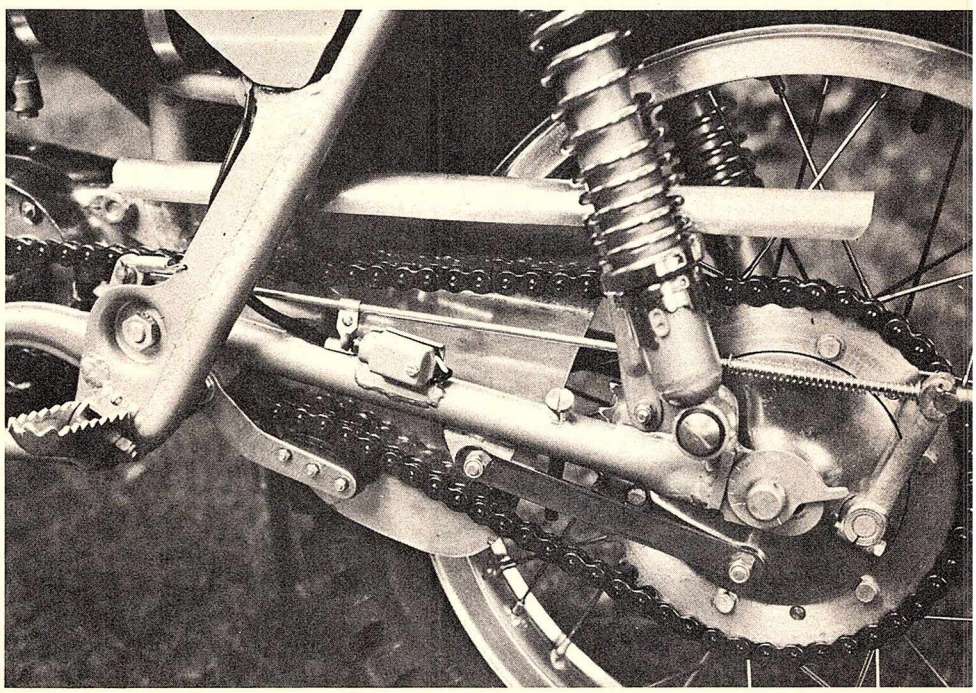
The Alpina is that something that filled a need. For years people have been purchasing Sherpa T trials machines just to pleasure ride those tight tricky trails found way out in the forests and deep in the woods. To a man they all would have liked larger fuel tanks and softer seats. Many would prefer a different gear selection than what is found on the T's. But change the chassis? Alter the broad torque curve of that smooth 250 engine? Never!

Basically the Alpina is a Sherpa T. Senor Bulto sought the services of Sammy Miller to help him make a trials machine, the *best* trials machine. From 1965 till now the Sherpa T has been gradually changed and improved to the point of perfection. The Sherpa T chassis gets its power to the ground like no other, and handles extremely well under all conditions. These changes had been gradual, like every time a new batch of bikes was to run down









BULTACO ALPINA

the assembly line there would be something different; something better, an improvement. The Alpina took advantage of all this by utilizing the Sherpa T chassis and fulfilled the needs of the long distance trail rider.

The 1.5-gallon T gas tank was increased to 2.6 without becoming excessively wide (they added a cavity down and back near the front of the seat). The seat itself was made larger and more comfortable than the boards found on trials bikes. The Alpina mounted its front fender high to suit U.S. tastes and also a speedometer. The trials gearbox with its ridiculously close first to second gear placement was swapped for that of the Matador, an evenly spaced, wide ratio, five-speed set. (Trials work requires the lower gears closer together because of the preciseness with which the machine must perform over low speed, difficult terrain.)

Although we were thoroughly impressed with the Alpina, we did come up with some well founded faults on that particular bike. It was fitted with trials shocks that proved inadequate for fast trail riding. The seat was still a bit firm. Some thought the trials bars were fine and some didn't. So, like the Sherpa T, the Alpina has gone through a minor change each time a new batch was built. All totalled, there are roughly 40 improvements since the first Bultaco Alpina we tested just last year.

We'll list the more impressive ones: You can immediately spot the thicker padded seat that came out a few months ago along with the motocross handlebars (I personally prefer the trials-type). The fuel tank is a couple of layers thicker and the odometer is now a tenth trip model. (We made comment on that.)

Gone are the Spanish Amal steel levers, they have been replaced with alloy forgings. The front fender, although still mounted up under the triple clamp, is hung at three points off a single bracket, that makes it lighter and less complicated. The engine had three plastic inspection plugs in its cases, the primary filler plug is now aluminum. (Gradually the others will be changed, too.)

The frame gussets that mount the swing arm pivot and footrests have been moved outward. Footrests now pin onto welded-on

stubs instead of bolted-on plates, and the fulcrum nuts are recessed. The chain tensioner has now been turned around and is a leading link instead of trailing. The ½-inch pitch rear chain has been changed to the stronger ⅝ths. The rear backing plate is a closer fit to the hub so less crud can find its way in. They changed to full-size rear shocks a long time ago, but the plastic bumpers on the fork stops are new.

Removing the tank/seat combination was always a pain because invariably you would have to hunt for a lost nut or two. These nuts are now fastened to the frame. A stoplight switch has been added and a resistor within the stoplight circuitry. If the filament goes the motor still runs.

The engine has had its little improvements, too, like double seals on the crankshaft.

Finally, a chain oiler has been built into the swing arm. Only one problem, it's gonna be tricky trying to get oil into the oiler, you need a right angle screwdriver just to remove the filler plug. Oh yes, the rear sprocket is an alloy one.

We would like to see them mount the fender next to the front tire like the Sherpa T. After all, the benefits gained from better engine cooling far offset the reducton in unsprung weight found with high fenders. Those big, wide motocross bars are dumb on this bike because it is not comfortable for stand up riding. The trials bars would be much more practical especially with a chassis that is designed for off-your-arse riding. It still has a slow turn throttle, but like the bars, that's another matter of personal preference.

Lastly, and we spoke of this a whole year ago, the darn speedo should be driven off the front wheel, not the rear. It's really a shame to pick on such a fine motorcycle. The Alpina, with its utterly different look, is one of the more totally successful motorcycles around today.

It is light, agile, and quick handling. The engine doesn't come-on with a surge, it just pulls. The bike works in such a manner that it gets there quickly, not fast. You can do silly things like sliding and wheelies, but it's got to be taken into the woods to be thoroughly enjoyed.

The Alpina will submerge to its air filter that is just under the seat and pull up a muddy or grassy bank without breaking traction. It has a way of picking a trail up or down a rock strewn mountainside and scoots up a dry riverbed with ease.

With an engine that's not the least bit ornery, a gearbox without holes, and a chassis designed to get the utmost from weight transfer and traction, the Alpina doesn't have a peer.

In true trials tradition you get a cummerbund with each Alpina. Actually, it is a tool pouch you buckle around your waist so you can carry things along, like your very own rock to land on. In mountain riding the Alpina is good for 70 to 90 miles before the 2.6-gallon tank runs dry. Its sheer ease of handling makes it untiring to ride, and the very quiet sound emitted from the second muffler doesn't hammer at your eardrums.

Alpinas are not fitted with batteries. Their lighting system comes from a flywheel magneto that also supplies spark to the plug. Although most Bultacos use the more modern pointless CDI-type ignitions, Sherpa Ts and Alpinas retain the pointed-type. The reason for this is the spark at low speed running occurs at a more predictable time and is stronger, very important for trials riding.

The lighting coil puts out AC current to a 6-volt headlight and taillight. A fairly bright beam is thrown out by the headlamp that is ample for afterdark chugging. A switch on the left bar handles both beams, off, and has an engine kill button. There is no horn as the machine is not intended to be sold as street legal, although it will pass in many states with just the addition of a bulb-type horn.

The stoplight gets its power off the other end of the primary ignition coil. This means as long as the engine is running there is power to the bulb independent of the head/taillight switch. Problem was when the headlight filament would part there would be no more spark to the plug. All they needed to correct this was to put a resistor in the stoplight circuit, and this they did with the '73 Alpina.

It seems there is little left to do to improve the bike, but knowing the way things are done at the Barcelona works, the Alpina, like the Sherpa T, will continue to get better. We'll have another look about this time in 1974 and see. ●

MAKE BULTACO
MODEL 250cc ALPINA
PRICE AS TESTED $975.00
MAXIMUM SPEED AS GEARED 72 mph
WEIGHT 205 lbs. DRY: Fuel Tank Empty

Distributor:
East: ..... CEMOTO EAST
P.O. Box 1065 ..... Schenectady, New York 12301

West: ..... BULTACO AMERICAN LTD.
P.O. Box 101 ..... Santa Clara, Calif. 95052

ENGINE

Engine Type ..... SINGLE CYLINDER, 2-STROKE
Bore 72mm
Stroke 60mm
Displacement 244.3cc
Compression Rato 9:1
B.H.P. at R.P.M. ..... 20 AT 5,500
Carbueto ..... 27mm AMAL CONCENTRIC
Ignition ..... FEMSATRONIC, POINTED
Starting System ..... FOLDING KICK
Lubricating System ..... OIL MIST

FUEL AND OIL

Oil Capacity ..... IN FUEL
Oil Recommended ..... BARDAHL VBA 50W
Fuel Capacity ..... 2.6 GALLONS
Fuel Recommended ..... PREMIUM
Approximate mpg 45

FILTERING SYSTEMS

Air ..... OIL WETTED FOAM
Oil ..... N.A.
Fuel ..... SCREEN

FRAME

Frame Type ..... SINGLE DOWN TUBE
Weight Distribution .... FRONT: 48%, REAR: 52%
Wheelbase ..... 52.5 TO 53.5 INCHES
Ground Clearance ..... 11 INCHES
Peg Height ..... 13.8 INCHES
Seat Height ..... 32 INCHES
Handlebar Width ..... 34 INCHES

SUSPENSION-TYPE

Front ..... TELESCOPIC FORK
Rear ..... SWING ARM

SUSPENSION-TRAVEL

Front ..... BETOR 7 INCHES
Rear ..... BETOR 4 INCHES

DRIVE TRAIN

Clutch Type ..... MULTI-DISC, WET
Primary Drive ..... SINGLE ROW CHAIN (2.375:1)
Countershaft Sprocket ..... 14 TEETH
Final Sprocket ..... 52 TEETH
Final Drive ..... SINGLE ROW CHAIN (3.71:1)

Gear Ratios	Internal	Overall
1st	.287:1	30.415:1
2nd	.442:1	19.886:1
3rd	.625:1	14.064:1
4th	.821:1	10.706:1
5th	1.000:1	8.790:1

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Acceleration		●	
Power Band		●	
Starting			●
Engine Noise		●	
Muffling		86Db(A)	
Vibration			●
Handling			●
Choice of Tires			●
Suspension			●
Rider Comfort		●	
Transmission			●
Instrumentation		●	
Lighting		●	
Toolkit		●	
Paint and Chrome		●	
Styling			●
Mileage		●	
Braking		●	

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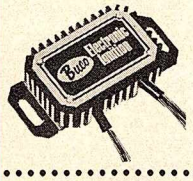

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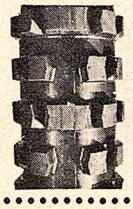

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COLUMBUS HALF-MILE

(Text continued from page 47)

like he was out cow trailing, and took the checkered flag with room to spare. Scott came home all alone in the runner-up spot, with Palmgren pushing his 750 Yamaha ahead of Don Castro and Dick Mann. Frank Gillespie rode a fine race to bring his Norton in to one of his finest National finishes. Gene Romero and Larry Darr were within inches of a dead heat for seventh, with the decision going to Romero. The factory Harley-Davidsons of Rayborn, Beauchamp, and Sehl rounded out the next three places, with Hateley sitting in the pits looking at his smoking clutch in last place.

Even though the Experts put on a fantastic show, the Juniors were by no means shabby, particularly Scott Brelsford, who rode to a faster overall heat race (running the same ten laps), than any of the Experts. The only Southern California Junior present, Steve Nichols, also won his heat. Texas hotshoe James Rawls, took the third heat after a close battle with Jim Crenshaw and Mike Johnson.

At the drop of the green flag, Brelsford shot into the lead, followed by Nichols, Steve Gardner, and Bert Cummings. In the first turn Nichols managed to fall off and get run over by the Harleys of Cummings and Gardner. All three were out of contention, the Harleys being broken and Nichols being sore, but alright. On the restart it was again Brelsford over Steve Droste and Steve Delgarno, but not for long as Brelsford slid out in the same first turn starting lap two. Droste and Delgarno scrapped for a while until Jim Rawls came by to upset everybody. He nonchalantly took over the lead and rode away with it, while Crenshaw picked off Delgarno for third. Texan Teddy Poovey put his new H-D in fifth, making it five different brands in the top five. For those of you who are wondering, Rawls rode a BSA, Droste a Yamaha, Crenshaw a Norton, and Delgarno a Triumph. And if you're not wondering, what did you read the story for?

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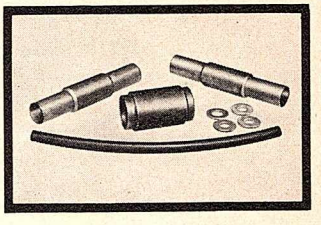

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Nuts & Bolts

(Text continued from page 24)

to get to the point, you stated that the engine of the 250 was capable of producing over 30 horsepower without too many modifications. Please, tell me what these are, how much they cost, and who to contact. By the way, right now I own an SL-100.

Bob Meadows, Jr.
Kissimmee, Florida

Your questions are answered in this issue!

Dear Sirs:

I have a Honda CL-100 with a trials tire on the rear and it seems to slide on gravel roads. Do you have any advice on how to control it better?

Chris Cross
Monticello, Ark.

Sure, reduce the tire pressure to about 8 pounds. But you'd better put a security lug in it to keep from tearing out the valve stem.

Dear Sir:

I have a question to ask you about my bike. I have a Honda SL-100. The bike is about 2 miles out of town, on my grandparents ranch. I don't have much time to ride it, except after school, and when I do ride it it starts to smoke. This happens after I ride about a mile not exceeding 35 miles per hour. During this time the bike does not smoke. After I have done this, I start laying on the gas. Then it starts to smoke. It has plenty of oil, and I try to cure this problem by adjusting the air intake needle. I don't know much about bikes, and it bugs the hell out of me to see a 1972 bike, with about 450 miles on it, smoke and I don't drive it faster than the manual says to during the breaking in period.

You have a great magazine, and keep up the good work. Your quickest reply will be greatly appreciated.

Greg Jones
Lampasas, Texas

If it's grey smoke then check the oil level to see if it truly is drawing engine oil into the combustion chamber. If you're getting black smoke you probably have a dirty air filter or the choke is not fully open.

Gentlemen:

(Re: June, 1972 "Nuts & Bolts," page 77.) Pity *poor* Bob Petro of Little Falls, New Jersey, for asking your magazine about a non-advertising bike such as the Bridgestone. You didn't even have the decency to give him Bridgestone's address (Rockford, Illinois).

The dumbest of dummies knows that pipes are available for almost any bike. My "Stone" GTR 350 ('70), will blow off any Honda, save the 750-4, ever made—but Bridgestone doesn't advertise so why bother—right?

I think if "nuts" could get bolted together he, she, or it (computer), might be able to answer questions a little better.

Bill McClusky
Dearborn, Michigan

Now let's not get snotty. A motorcycle is much like a wife, we've got to love it because we're married to it. As far as the high pipe for poor Bob, why don't you find one for him?

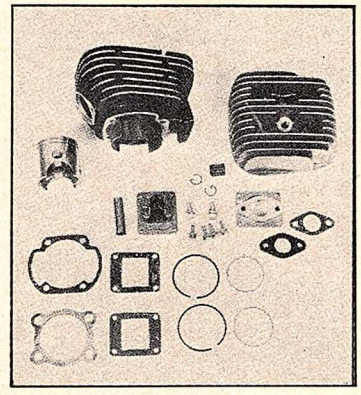
Dear Sir:

I just bought a 1969 Kawasaki Sidewinder. The bike was an outstanding performer until it had about 50 miles on it, then I noticed it missed at top end. I kept riding it until the plug oil fouled out. They checked the timing, carburetor, coil, fuel line, and replaced the plugs and points. I took the bike home and the same thing happened. The original baffle was broken in half so I replaced it; I drained the oil and put in Torco two-stroke 30 weight which I had been adding previously; I looked for shorts in the wiring; I took the head off and found the piston and rings in very good condition and the bearings seemed to be very tight; and I put in another plug but again the same thing happened. I've tried NGK, B8HC, B9HC, and Autolite 903s, but they all act the same. The bike is stock with the exception of an oversize piston and rings. I also noticed a knock when I released the throttle, which sounds like gas ping in a car only much louder and sharper. What is my next step?

D. J. Umade
El Monte, Calif.

Your knock was probably piston rattle, sometimes this is caused from the metering needle set in too lean a position, especially noticeable at partial throttle openings. This condition can also cause your plug to whisker as can improper air filters. Look into both.

YAMAHA POWER



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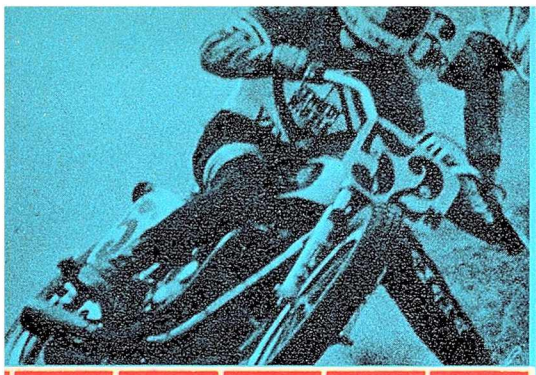

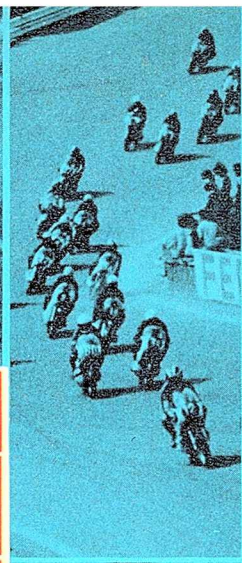

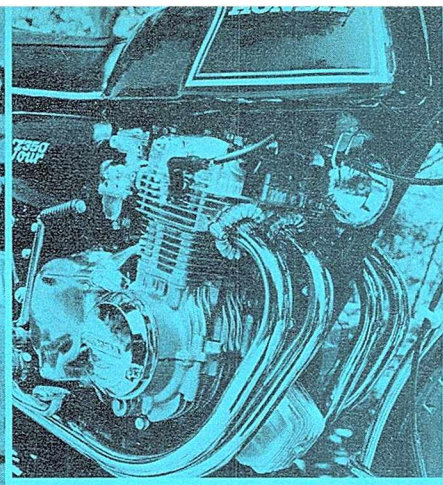

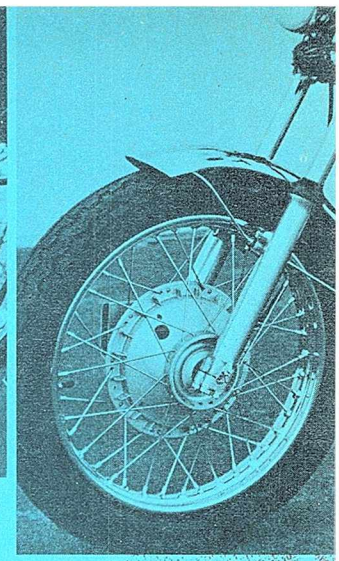

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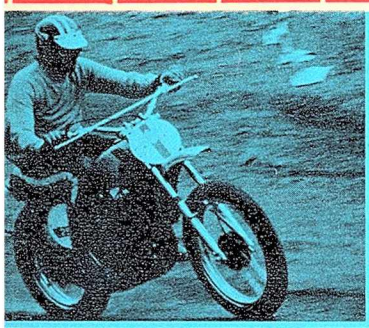
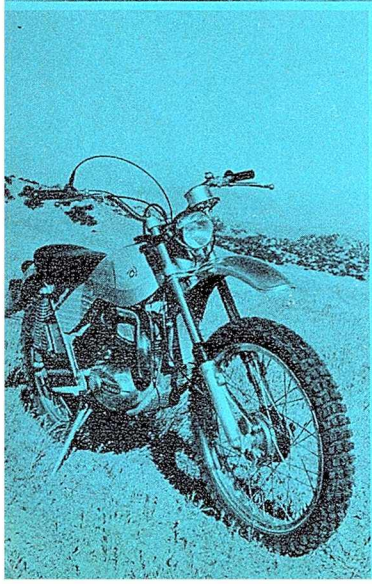
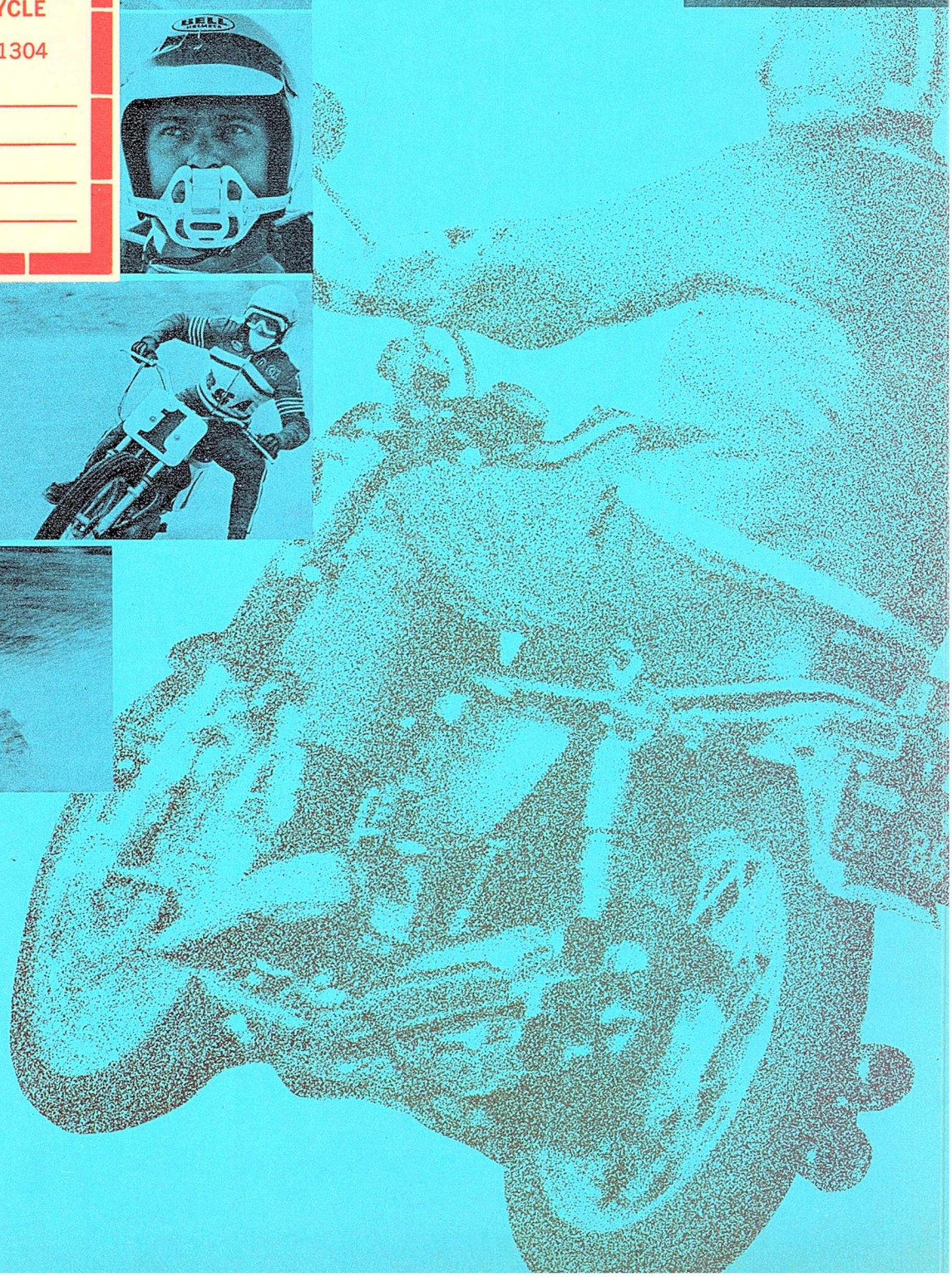




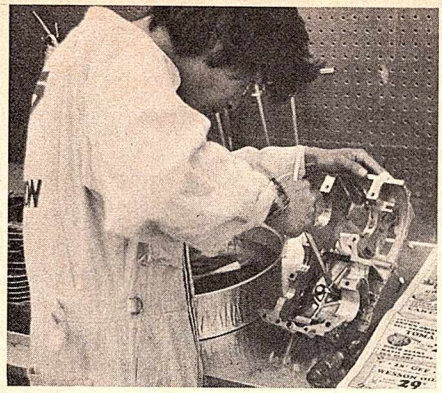


HONDA XL-250 MX PROJECT: PART 3

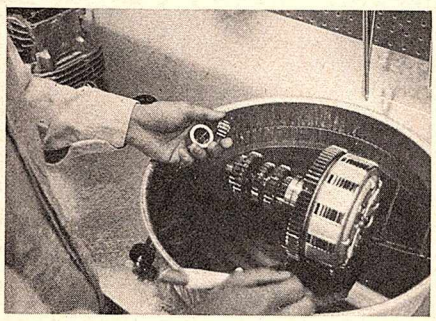
Bolting on 40% More Horsepower

Honda's 250cc four valve, single cylinder engine is unique in many ways. Besides having two valves more than one would normally expect, and an overhead camshaft that one does expect with Honda, it's got the most God awful short stroke anyone has ever seen for a 250.

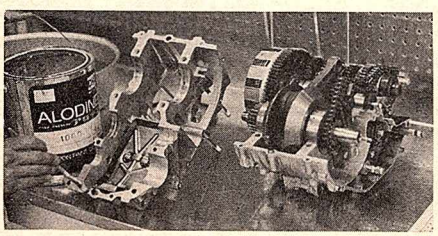
Engines are assembled in a clean room after they have been disassembled and thoroughly cleaned in solvent.



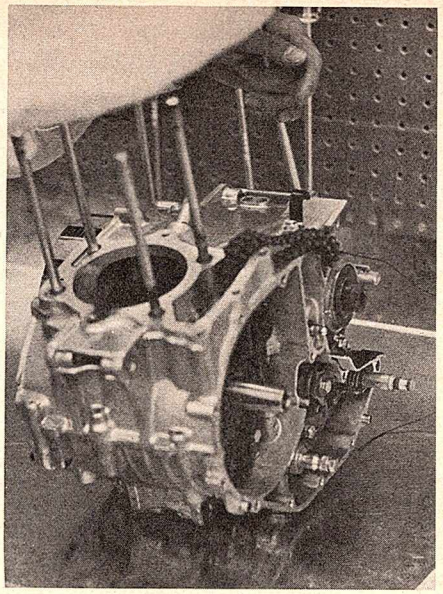
Here Fujio is reinstalling the engine breather baffle plate, the steel stamping is held in place with two 6mm bolts.



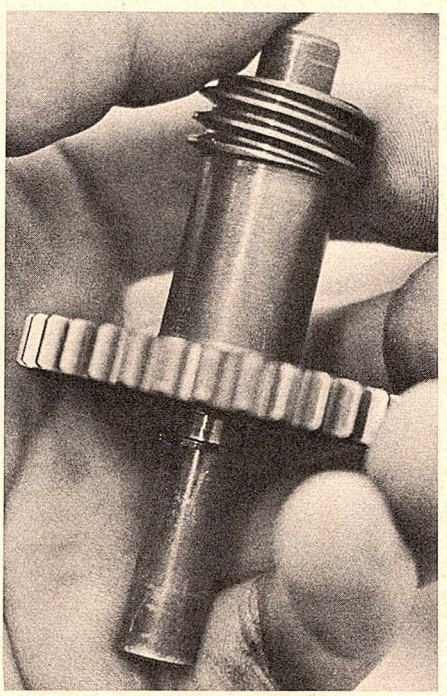
Transmission shafts ride in either ball or roller bearings which help to reduce power loss through the gearbox.



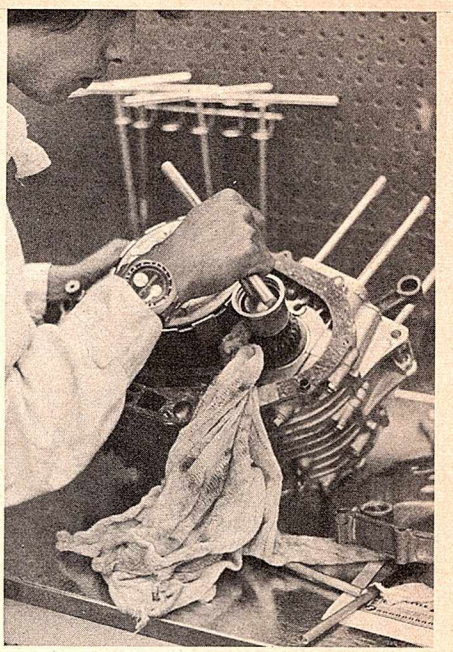
Yoshimura applies a special cement to the case halves prior to assembly. Note the position of the cam chain.



Case bolts are tightened bottom half first and from the center out.



Shown is the tachometer drive gear and shaft that fits above the crank on the primary side. It should be removed as tachs are not necessary on an MX application.



One of the few special tools used on the XL-250 engine is this 4-pronged wrench that retains the oil slinger. Note the rag wedged between the primary gears to jam up the works.

A few years ago this industry was aghast when some Spanish two-strokes showed up with a 60mm stroke and 72mm bore. The terrible part is they were quicker than anything in their class, a whole lot quicker. Now, the 248cc single Honda built has a 74mm bore and 57.8mm stroke. This configuration allows for a huge combustion chamber, like enough area to place four valves in, and a very low piston speed. If the stroke were lengthened to where it was close to bore dimensions you would have a 350, and chances are we will be seeing these soon in kit form if not from the factory.

The 250 engine with its huge shafts, bearings, and gears is certainly capable of withstanding the loads from a bigger mill. The stock engine is a very mild one, docile, and not the least bit tempermental.

Only one part of a four-stroke engine determines its personality, although other pieces contribute (or take away), the camshaft dictates how that engine will act. A cam's function is to open and close valves, regulate the engine's breathing. The precise moment of opening, closing, and the amount of, are all functions of the cam.

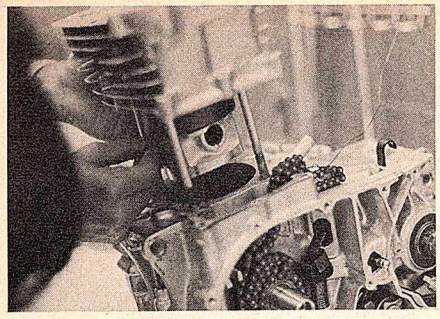
Honda's XL-250 is a gentleman's trailer and is as mild-mannered as an Oxford graduate. It pulls strong off the bottom and freely turns to 8,000 rpm. A 9.1 to 1 compression ratio is neither high or low and the 28mm Keihin carburetor is not small. The engine has abominable crankshaft weight and an over-heavy flywheel, both contributing to its mild manners.

Now the camshaft. To determine a cam's timing we fasten a degree wheel to the crankshaft and dial indicators to register movement of the valves. The standard cam begins to open the intake valves at zero or Top Dead Center, and closes the intake valves at 35 degrees after Bottom Dead Center. The exhaust valves begin opening at 35 degrees before Bottom Dead Center and are closed at zero, or Top Dead Center. Valve overlap is that time which the intake is opening and the exhaust is simultaneously closing.

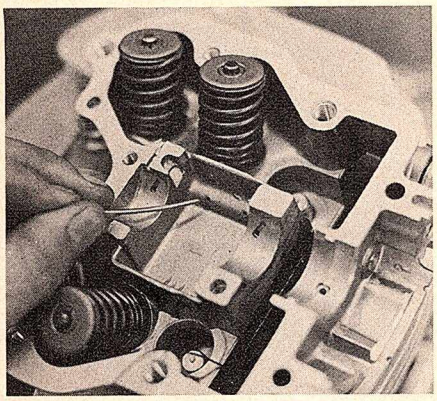
A part of getting performance out of four-stroke engines, in theory anyway, is to leave both valves open a little bit so the vacuum created by the outgoing exhaust will help pull in an additional inlet charge. Problem is large amounts of valve overlap are not conducive to mild-mannered, low speed running engines, and as we all know the stock XL-250 is as docile as a sedated kitten.

So in our search for performance we turned to the Yoshimura group to build us a motocross engine. Pop Yoshimura has built himself quite a reputation for having fast Hondas. Many times his modified production road racers have shut off the works racers leaving many red faces at the Fuji and Suzuka circuits.

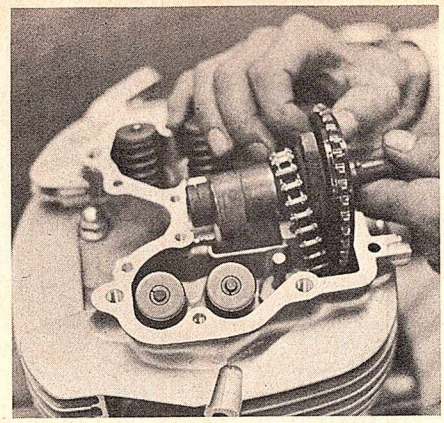
Pop is a strange one himself, he's a tall, very thin Oriental who spends



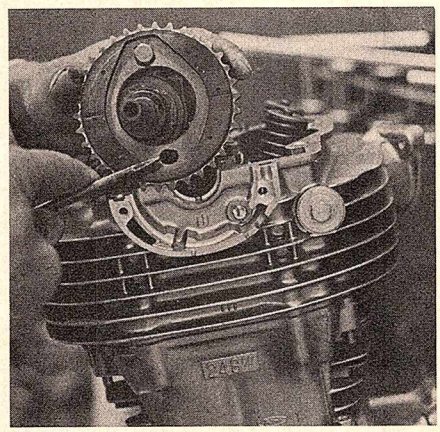
Ring gaps are positioned 120 degrees apart, the wrist pin is a push fit.



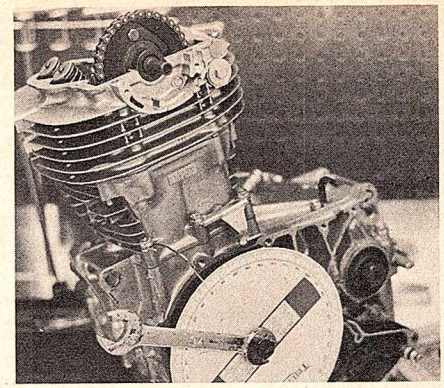
Fujio is pointing to the holes which pass lubricating oil to the cam bushings and cam lobes.



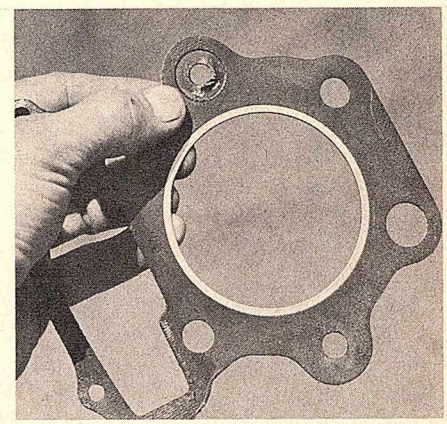
The drill for assembling cam, sprocket, and chain is more like a Chinese puzzle. Proper sequence is shown with chain being fitted over sprocket before sprocket is put into place.



Fujio is pointing at the sprocket holes he has oblonged in order to change the camshaft and sprocket position so the engine will degree in.



Top Dead Center is found with a dial indicator placed through the spark plug hole. The degree wheel fits against the flywheel magnets and a wrench turns the engine.



The indentation in this head gasket shows where it should be completely cut away as a result of the milled cylinder head.

all his time in his dyno room or on the drawing board. He cannot drive and does not ride a motorcycle, yet he can, and has, propelled through the quarter-mile traps faster than his son Fujio, a seasoned road racer. The Gary Fisher Honda that led Daytona for a very brief time until it lost its oil tank had one of Pop's engines in it. Yoshimura only builds engines, "Not time enough to mess around with other stuff," he says.

The pieces of our XL came to Yoshimura's new facilities in Simi Valley, and that's where we observed Fujio building the engine. Our old XL had not only been used by members of the press when it was a test bike, but we put a lot more miles on it sorting out the Trackmaster frame. Externally the engine's cases showed deep scars left when a certain editor tried to drown himself.

Only one special tool is needed to dismantle the complete engine, the right hand crankshaft nut wrench. The engine drain plug in conjunction with a small spacer (we used a socket), was used to remove the flywheel. The engine was thoroughly cleaned because Fujio insisted on using Castrol brand racing oil.

About 2½ pounds of material was machined from the crankshaft flywheels which will allow the engine to get its rpm's quicker. The crank rests on caged roller bearings that are located in the case lower half by two steel pins. Crankshaft, transmission main shaft, and lay shaft all lie on the same plane per Honda custom. Clutch side of the main shaft and sprocket side of the lay shaft have ball bearings while rollers are at their other ends. Power from the crank to the clutch is delivered through straight cut gears.

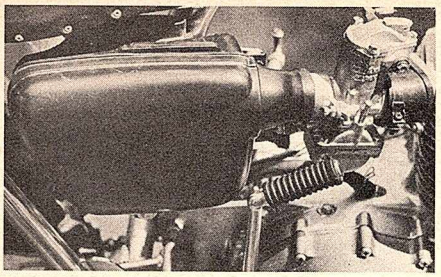
Yoshimura's piston for the XL-250 has pockets cut into the roof-shaped dome for valve clearance. When the engine was assembled, Fujio moved the piston to the top and placed a screwdriver over the rocker arms and moved the valves to visually check clearance between the valves and the piston. All four valves moved about an eighth of an inch before they made contact with the piston.

This added clearance is needed for two reasons. One, the cylinder head has been milled .7mm and, two, the Yoshimura camshaft has .8mm more lift than standard.

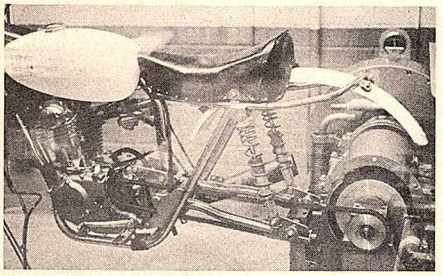
Pop's cams like the original item are made from billets, they are not welded up regrinds. The MX cam we used on our project bike opens the inlet valves at 15 degrees Before Top Dead Center and closes them at 45 degrees after Bottom Dead Center. It's what I call a balanced cam with the same figures representing the exhaust timing. The exhaust opens at 45 degrees Before Bottom Dead Center and closes 15 degrees After Top Dead Center. All these readings are taken with the factory specified 1mm valve clearances properly set and a dial indicator touching the valve spring retainer.

Most of Pop Yoshimura's secrets are found within the combustion chamber. Each of Pop's cylinder heads is a work of art with strange radii gleaming reflections on the highly polished surfaces. Naturally, the ports are flow tested and enlarged only slightly with a deeper pocket added near the upper part of the valve seat. A part of the valve guides that protrude into the ports are machined away and polished as are the heads of all four valves.

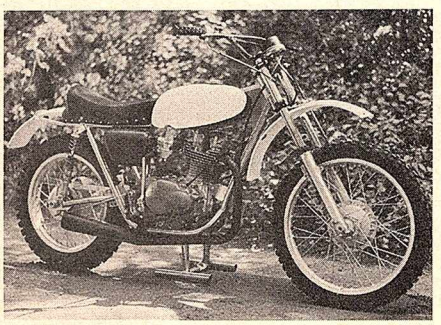
The combustion chamber has shallow mounds and valleys situated in relation to the spark plug hole and valve locations. They all have something to do with flow and swirl, it



The standard XL air filter is fitted to a magnesium Keihin carburetor. There are two holes vented to atmosphere that should also be piped to the clean side of the air filter.



This is how the machine looks bolted up to Webco's excellent dyno, it took nearly an hour to get it ready.



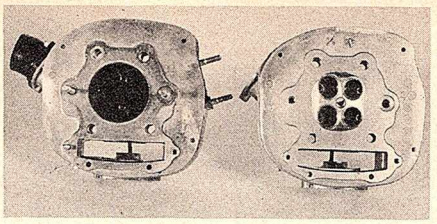
The bike looks every bit the part of a motocrosser. We used the tachometer to tune the engine, it came off later.

takes a good technician one full day to modify one XL cylinder head to Yoshimura specifications.

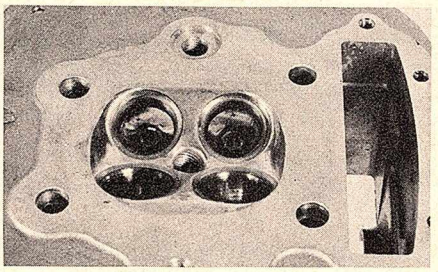
Fujio assembled the engine and took a degree reading of the new cam, it was 5 degrees off because the cylinder head had been milled. Honda has not made any facilities for altering cam timing, they go together one way and that's it.

The Yoshimura method is to hand file the two bolt holes in the cam sprocket to allow it to rotate a little. With the upper end back together Fujio was able to slip the sprocket in its slots just enough to get the camshaft zeroed in, that is, so the valves open and close when they are supposed to.

Equipped with dimensions from Yoshimura we had an exhaust pipe built to fit the bike. This Torque Engineering pipe is one of a kind and is designed to extract maximum horsepower. When we fired the bike



Standard head on left and Yoshimura head, a milling machine took away the round combustion chamber.



Hours of meticulous hand work is reflected in the combustion chamber and exhaust ports.

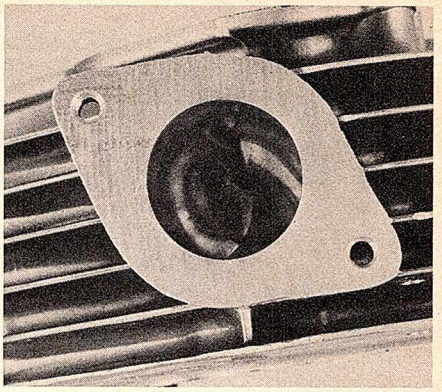
up it tried to rattle the glass right out of the office windows.

A special magnesium Keihin carburetor with a 31mm diameter venturi was fitted to the stock rubber manifold, these units are said to increase horsepower on any Honda engine 10%. We had to go to a conventional throttle and cable hook-up as compared to the dual pull system that comes on the stock bike. Although dyno tests were performed without an air filter we fitted the original unit on the machine with no noticeable loss of power.

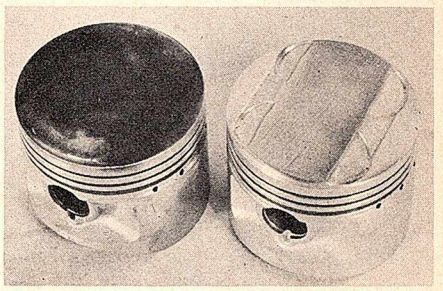
Dynamometers are an ingenious device for measuring horsepower and torque produced by an engine. No two are alike and the most effective way to utilize them is to always use the same one. Horsepower is something the boys at Wall Street have blown way out of proportion to the point where it has little value left. Neither Honda or Harley-Davidson publish horsepower figures—not because most people get more, but because it is in bad taste.

The dynamometer at Webco in Venice, California, is probably the best in this country. A box stock XL-250 was rated at 16.8 horsepower at 8,000 rpm on their dyno. The XL-250 engine has been rumored to produce anywhere from 21 to 23 horsepower and this is acceptable when that machine's performance is compared to others in its class.

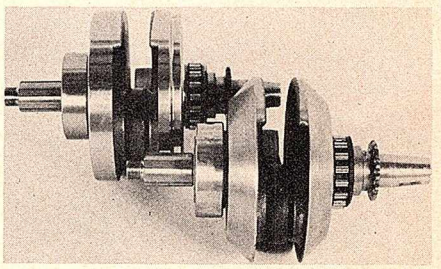
We bolted our XL on the dyno at Webco and got some pretty far-out readings. Jetted properly and using the factory specified 45 degrees ignition advance, the engine pulled 24.7 horsepower at 8,000 and 8,500 rpm. At 9,000 it dropped off .3 to



The web that separates the two valves is knife edged and polished to aid flow.



Piston on right is machined for the higher lift cam so the valves won't collide with the piston.



Standard and Yoshimura treatment crankshafts, excessive material and weight was just plain machined off.

24.4 horsepower. Pop's engines pull very well from the bottom and produce a very broad power band. The Yoshimura 250 was getting the same horsepower at 6,200 rpm that the stocker got at 8. The engine pulled 20 horsepower at 6,800 and steadily increased its output. One of the beautiful things about this Honda engine is the way it just ran there and held its temperature gauges within safe limits.

The only problem we had was from a lot of oil spew which turned out to be caused from too short an oil breather tube.

Pop said this cam would work well with the stock exhaust system so we tried that, too. It had the same characteristics as with the megaphone system only 1.9 horsepower down the scale. But man, was it easy on the ears! Within the sound-proofed dyno room, the only way we knew it was

Text continued on page 75

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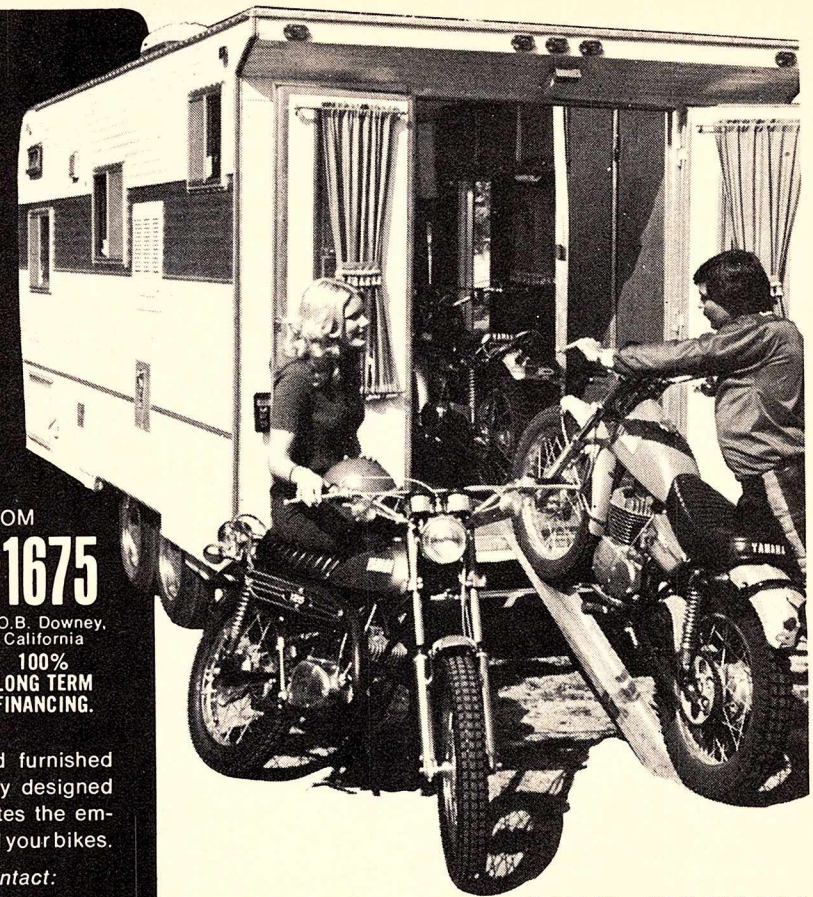

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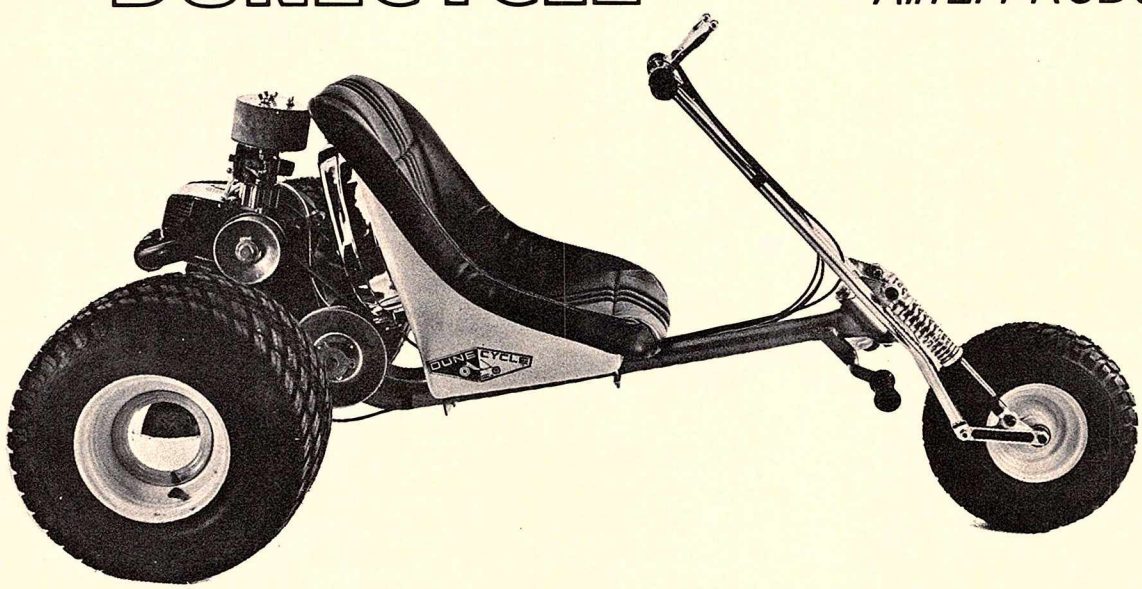

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THE HOT SET

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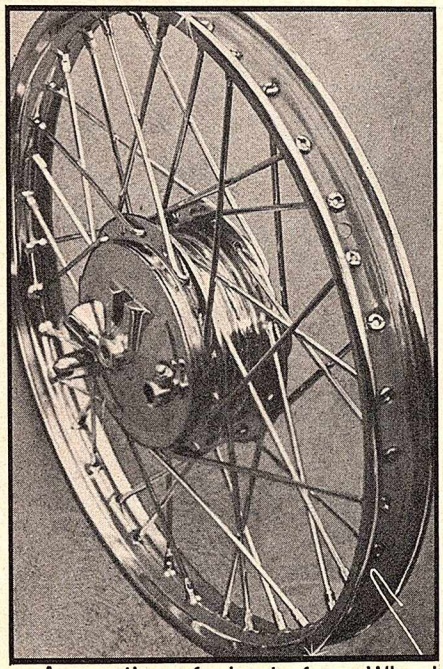
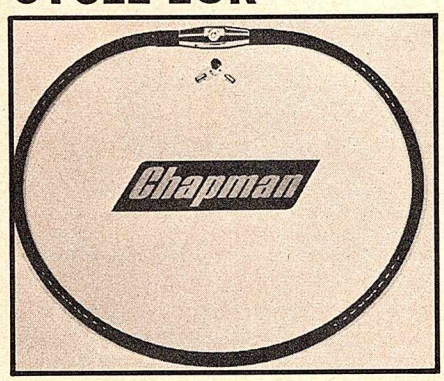


A new line of wheels from Wheel Specialties has just been announced. These are custom front wheels with a hub brake unit. This new item is available for all cycles in 16″, 17″, 18″, 19″, and 21″ rim sizes.

Now custom cycle riders can have the narrow front look and ride in safety. The brake assembly is street legal in all States. Replacement and rebuild parts are readily available. The entire assembly is top quality chrome plated and comes complete with bearings and spacers.

The hub brake utilizes a stock front brake cable set-up. This unit lists for $99.50 F.O.B. from: Wheel Specialties, 363 No. Anaheim Blvd., Dept. MC, Orange, Calif. 92668.

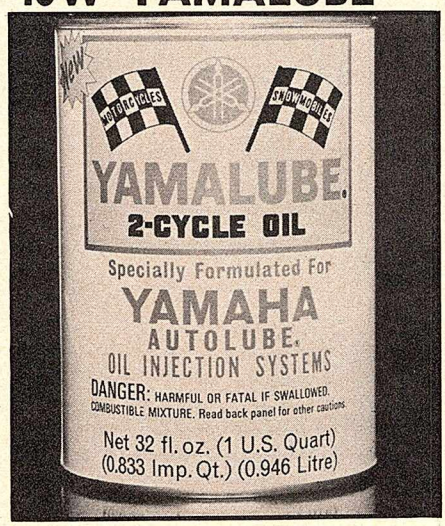
CYCLE-LOK



The motorcycle division of Chapman Security Products has announced an all new concept for securing your motorcycle against theft. Their lock uses a large diameter tempered alloy steel wire rope with a bonded on vinyl covering to protect your cycle's chrome. Each end of the cable has a unique coupler which uses the Ace-type of circular lock while fitting together to form a smooth, strong, and positive locking arrangement.

Available at cycle shops everywhere, or write to, Chapman Security Corporation, 5567 North Elston Avenue, Dept. MC, Chicago, Illinois 60630.

40W YAMALUBE



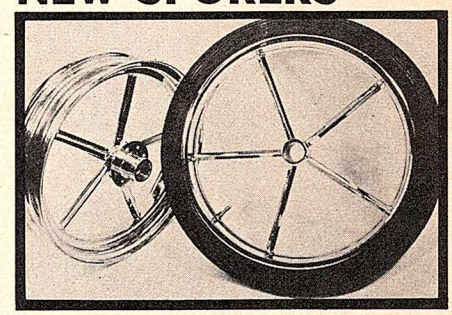
A specially formulated new oil designed particularly for 2-cycle engines has just been announced by Yamaha International Corporation.

Unique to "New Yamalube" is a fuel power component which provides optimum flow and metering accuracy, even at sub-zero temperatures. Upon injection into the engine, the fuel power component becomes part of the gasoline, leaving the high viscosity oil for full-strength lubrication. The SAE 40-weight oil also features ashless detergent and rust inhibitor.

Used regularly, Yamaha claims New Yamalube 2-cycle motor oil will: 1) Reduce visible smoke and exhaust odor, 2) Minimize spark plug fouling, ring sticking, piston burning, port blocking, combustion chamber carbonization and overall engine wear, 3) Maximize power, performance, engine life, and dependability, 4) Ease engine starting, and 5) Protect internal engine parts from corrosion, during both periods of operation and storage.

New Yamalube is available exclusively through Yamaha motorcycle and snowmobile dealers. ●

NEW SPOKERS

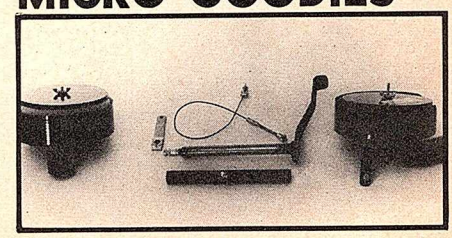


Wire-spoke wheels have been the norm on motorcycles for many years, but a Glendale, California, firm has introduced a new solid-steel wheel which offers so many advantages it could conceivably replace the conventional motorcycle wheel. Tests have shown the wheel to be extremely rugged and shock-resistant. It eliminates loose spokes, truing, and makes it possible to use tubeless tires. In addition, it is easier to clean and polish.

Wheels are available with 5, 6, or 10 spokes in 16- or 17-inch diameters and in popular widths. A choice of square, hexagonal, octagonal, or twisted spokes give the customer a wide latitude in creating his own unique look. All the wheels are heli-arc welded and show-chromed.

Some dealers already have wheels in stock, and the company is currently establishing more dealers. Meanwhile, orders may be sent directly to the manufacturer, Scott-Gaffney & Co., P.O. Box 10296, Dept. MC, Glendale, California 91309, (213) 241-0820.

MICRO GOODIES



UP For Bike'n Bod

Here's three new products from K & G Engineering to help make the Rickman Micro Metisse the ultimate racing machine. In the center is a straight-pull cable brake kit which eliminates the spongy feeling experienced by many riders with the standard cable-and-housing arrangement. The kit, which retails for $19.90, consists of 4 pieces: the cable assembly with swaged-on fittings at both ends for extremely long life, the pedal and torque rod assembly, the actuator arm, and the bearing tube which is fitted with a Zerke fitting for easy lubrication.

Flanking the brake assembly on either side are two sturdy high capacity air cleaners designed to fit the Micro Metisse with either the Zundapp or the Hodaka engine in place. Retailing for $19.95, the air cleaner on the right is designed to be side mounted, while the one on the left is to be mounted in the center of the frame, and both contain the Filtron element inside.

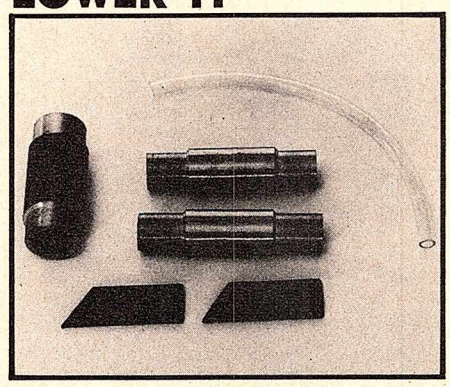
All three of the above products are manufactured by K & G Engineering and they are distributed by Steen's of Alhambra, California.

THREAD INSERT KIT

A new kit assortment of E-Z Lok thread inserts for repairing stripped threads in motorcycle spark plug ports is now available from Aragon Distributing Company. Designed for use with 14mm spark plugs, the E-Z M1400 thread insert kit contains 10 each of ⅜", ½", and ¾" reach inserts, the most popular motorcycle sizes. Included also, are two bottles of Locktite high temperature lock and sealant.

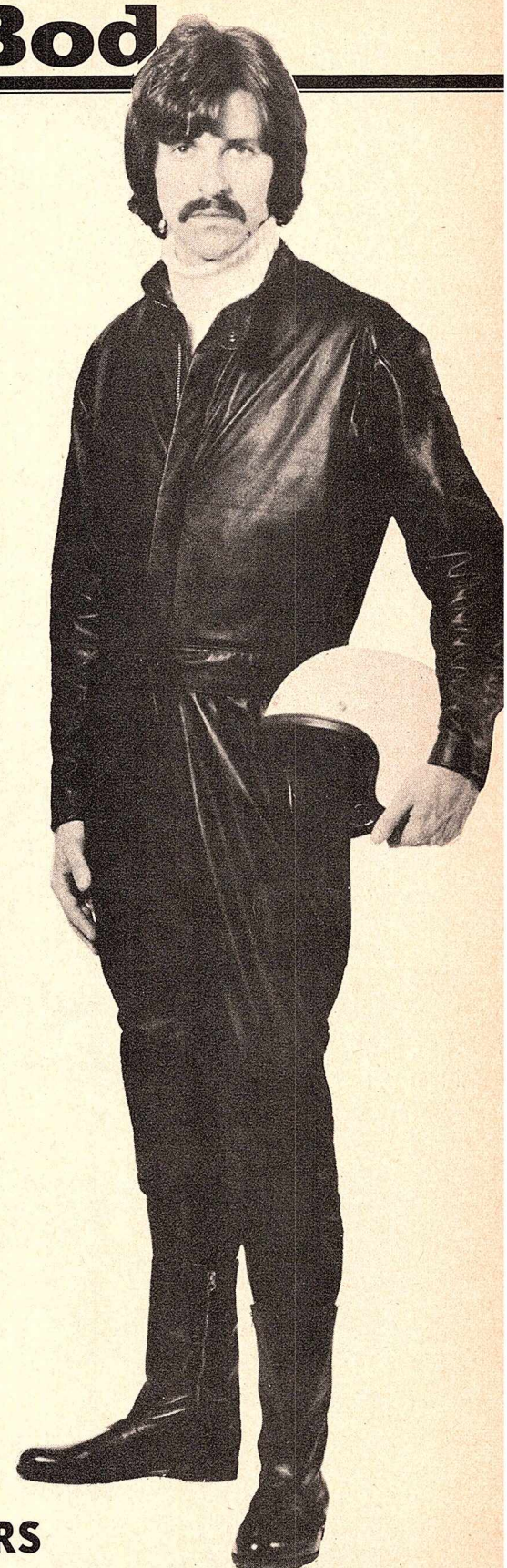
A nylon locking device locks the insert firmly in place during installation, and no special tools are required. Each kit is furnished in a heavy-duty, welded steel box with hinged lid and snap lock to withstand shop usage and abuse. Full price is only $27.98 from, Aragon Distributing Company, 323 West Maple Avenue, Dept. MC, Monrovia, California 91016. Add one dollar for Aragon's all new complete "Show & Go" catalog of motorcycle parts, accessories, tools, and shop supplies.

LOWER IT



If your Yamaha RT-1 or DT-1 seems a bit uppity, you might want to knock it down an inch or so and make it a slider instead of a faller. This kit allows you to do the job with ease. Simply cut out the frame where indicated in the detailed instructions, insert the pieces, and weld it up.

Everything needed in the way of material is included, even a new gas line. All you add is love and welding rod. The price is only $14.50 from, K & G Engineering, 2353 San Fernando Road, Dept. MC, Los Angeles, California 90065, (213) 222-8778.



OFF-ROAD LEATHERS

The new Top Gear tough off-road leathers are made to take the roughest moto cross wear and tear. Jacket and pants zip together for snug fit of a one-piece outfit. Padded elbows, knees, and shoulders. The sleeves are zippered, and the leathers are completed with warm quilted lining.

Available in black, in sets only. Men's jacket sizes 36-48. Ask your local dealer or write to: Top Gear, 80 Pompton Avenue, Dept. MC, Verona, New Jersey 07044.

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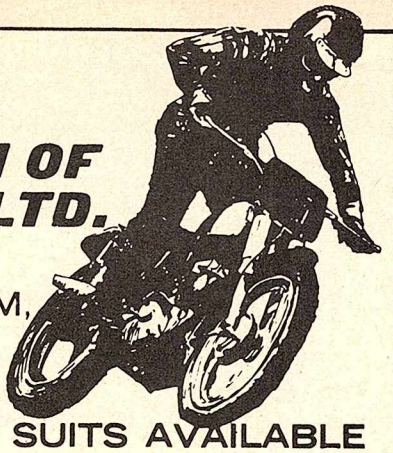

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The competition specialists for: 'Big T' moto-x leathers by Tarantella, Britain's #1 manufacturer, also in kiddie sizes with choice of colors and side stripes—'Big T' moto-x gloves, the latest concept in moto-x gloves, soft and supple with colored finger/thumb protective backing and Velcro wrist fastening—Grand Prix moto-x jerseys—socks—Ashman moto-x and trails boots—Barbour and Belstaff clothing—Bert Greeves and Kett body belts—Jofa mouth and chest guards—Carerra moto-x goggles—alloy fenders—oval alloy racing number plates and stick on numbers—chrome steel and alloy brake and clutch levers—Husqvarna alloy gas tanks—Renold chain—Lodge racing plugs—nylon lined 'Flexercable' cables for Greeves, A.J.S., Husqvarna, Montesa, etc.—Amal concentric carburetors up to 38 mm.—Cheney equipment—Girling shocks—spares for Greeves, A.J.S., (Moto-X), Montesa, Cotton . . . and many other top quality competition goodies. Send for return air mail quotes to above address or send $1 (refundable) for illustrated catalogue on many of the above items to Hyland M.V., P.O. Box 39393, Los Angeles, Ca. 90039.

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EUROPE

Text continued from page 6

500 European championships has failed to score. Although barely past the halfway stage, Joel Robert seems to have sewn up the 250cc World Championship again on his Suzuki. In winning the Russian round he chalked up his 50th Grand Prix win, thus winning more than any other rider and has won in every country in which the World Series is held.

50 year-old police definition of a noisy motorbike, "A rifle being fired down a drain pipe." Talking of noise brings us to the quietest motocross bike in use in the top class—the 410 AJS of works rider Vic Eastwood. It was with some surprise that his already whispering ghost recently sported an American Xdusor device on the tailpipe. This circular object had the outward appearance of an air cleaner box. When asked the need for further quieting, Vic is reported to have confided that he hoped to sneak up behind the opposition without announcing his coming.

Following his TT wins, Agostini had the disaster of retiring in both 350 and 500cc events in the Yugoslav Grand Prix. And whilst the 350 race was won by little-known J. Drapal (Yamaha), his teammate Alberto Pagani won the 500 race so that MV honor was saved.

For many years British sidecar motocross men have been supreme in the Championships and the popular weapon has been the almost universal Wasp frame kit wrapped round one of the many versions of the Triumph power plant. But, this year the Europeans have been doing their homework well and have discovered the virtues of the Wasp kit but have found that the Norton Commando engine much to their liking, and they have the beating of the British crews. One of the reasons for engine choice may be the availability of the Norton bag of tricks whereas Triumph does not sell engine units alone, and the cost of building a Triumph motor from new spares is prohibitive. Which points a moral . . . These sidehack devices will soon, we understand, be winning in the States. Riders over there are quick to note just what is bringing home the bacon in Europe. Unfortunately, the copy artists get in

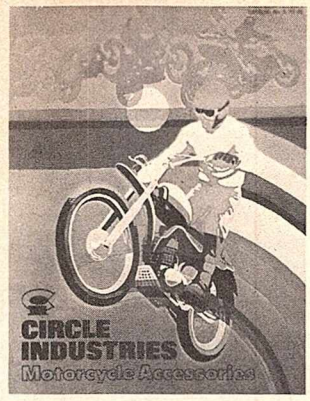
Text continued on page 72

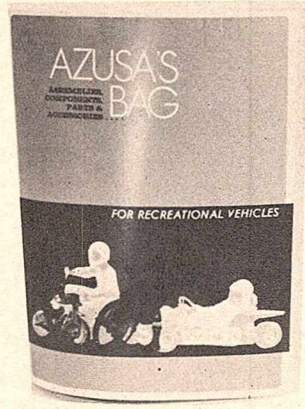
NEW CATALOGS FROM . . .

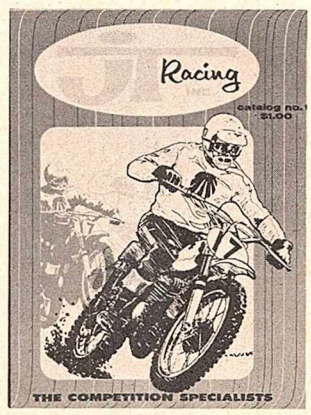
CIRCLE INDUSTRIES

The new Circle Industries Motorcycle Accessories catalog is off the press and ready for distribution. Starting with the four-color front cover the catalog is all new and features the "world famous" Circle Industries Weight Watcher sprockets, and the latest motorcycle accessories designed and manufactured by the California firm.

Write today for the new motorcycle accessories catalog to: Circle Industries, 2536 Seaman Avenue, Dept. MC, South El Monte, California 91733 or phone (213) 444-4526.







Hundreds of new items are in the new K & N catalog including over one-hundred and fifty different air filters listed for every make and model motorcycle. Accessories include handlebars for motocross, desert, flat track, and street, expansion chambers, fenders, wheels, and much, much more! If you ride the dirt, street, or strip you want this catalog.

Order your 1972½ K & N motorcycle catalog today for only $2.00. Write to: K & N Engineering, P. O. Box 1329, Dept. MC, Riverside, California 92501.

K & N ENGINEERING

A new 40-page catalog listing hundreds of recreational vehicle components, parts and accessories has just been released by Azusa Engineering, Inc. This latest issue (#14) lists dozens of brand new items not previously available. A special racewear measuring guide section is included with 16 actual color samples of genuine naugahyde and two pages of size, style, price, and color information.

Send only $1.00 for your copy of this new edition to: Azusa Engineering, Inc., 1542A Industrial Park Street, Dept. MC, Covina, California 91722.

AZUSA ENGINEERING

J-T RACING

The "competition specialists" is what the fellows at J-T Racing, Inc. call themselves. They'd like the world and *you* to know about the latest trick parts for dirt bikes and riders in their new catalog. Inside are page after page of the absolute tops in gear for the really serious enthusiast. Some of the parts and accessories pictured and described include titanium frames, alloy gas tanks, tires, shock absorbers, leathers, chest protectors, and of course, J-T Cycle Socks and Hand Handler.

Try them on for size by sending $1.00 for their new No. 1 catalog. Ask for 281-JTE from: J-T Racing, Inc., Box A, Bonita, Calif. 92002. ●

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But excessive noise, or abuse of terrain, can still cost us a lot of ground.

Remember, these lands *are* your lands. Use, don't abuse, your right to ride.

MIC
MOTORCYCLE INDUSTRY COUNCIL

One of the Better Kiddie Racers

IMPRESSION: THE Indian JUNIOR CROSS

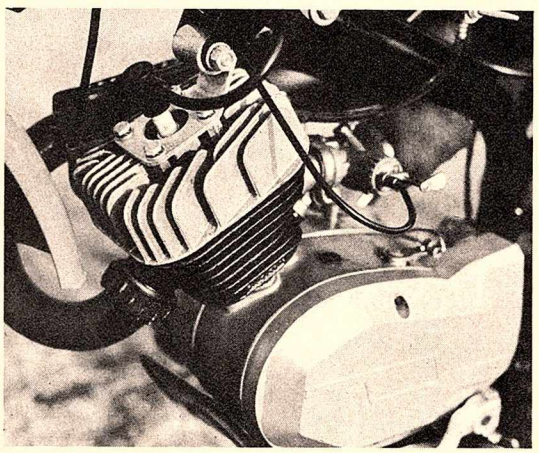
Yamaha introduced to the public a little machine known as the Mini Enduro. The introduction of that little bike signaled the birth of the mini-cycle industry. Currently, there are at least a half-a-dozen machines that qualify as true mini-cycles.

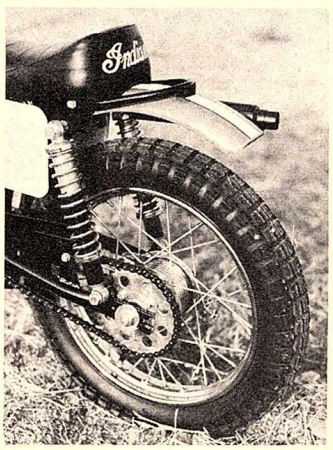
Visually, a mini-cycle is a very easy machine to identify; it looks like a miniature or scaled down motorcycle. One of the newest, and best, machines to enter the mini-bike field is called the Junior Cross and it's built by the Indian Motorcycle Company.

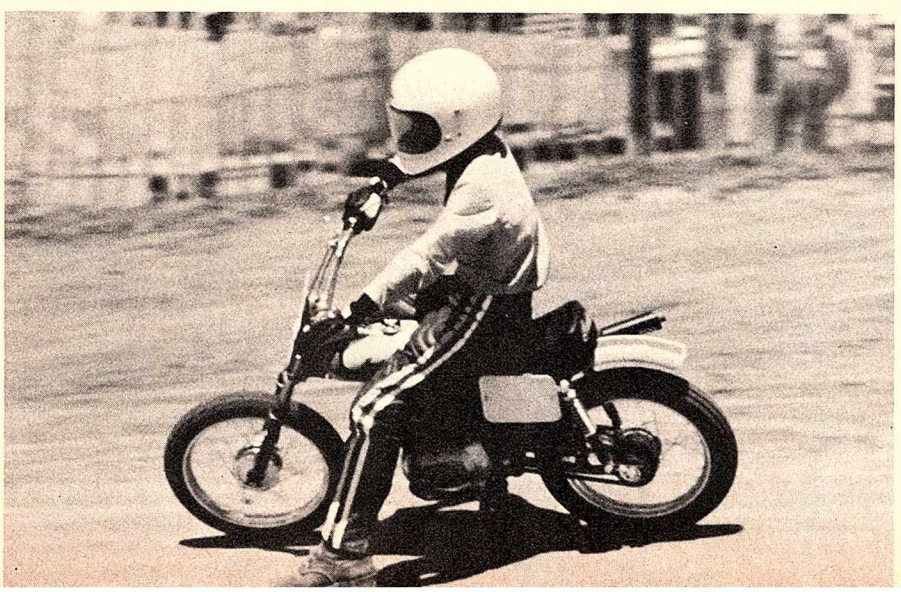
The Junior Cross is almost a stereo-type when it comes to classic mini-cycle dimensions. Seat height is 24 inches, ground clearance is 8 inches, the wheelbase is 38.5 inches, and overall length is 57 inches. Certainly some of the most impressive statistics apply to the power-to-weight ratio. The little engine puts out 3.9 horsepower at 7,000 rpm, and the total weight of the machine full of gas is a mere 95 pounds. Obviously, that 3.9 horsepower doesn't have a lot of weight to move across the ground.

The engine is a single cylinder, two-stroke with a bore of 38.8 millimeters and a stroke of 42 millimeters. Overall capacity is 49.6 cubic centimeters, and the compression ratio is 9:1. The cylinder is of cast iron, while the cylinder head is a light alloy casting. The rise and fall of the single ring, slightly domed piston controls the induction. The connecting rod is an "H" section and is fitted with a bushing at the small end and a needle bearing at the big end. A pressed-together device, the crank does not use full circle flywheels; instead, bob weights are used.

Ignition is created by a magneto assembly driven off the left end of the crankshaft. Mounted back under the seat, the high tension coil is neatly tucked away from heat generated by the engine. Helical cut gears transmit the power from the right end of the crankshaft to the clutch hub. Four speeds in the transmission make



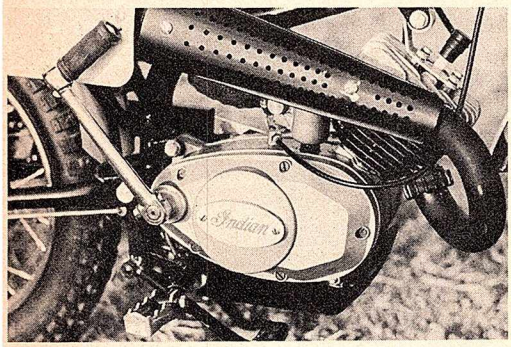


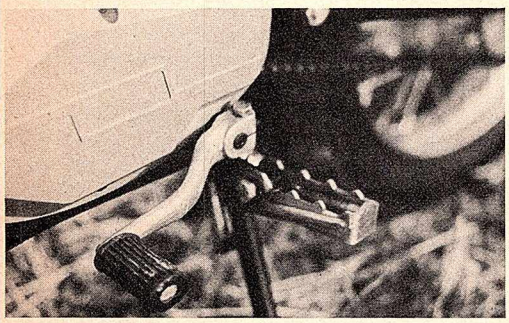


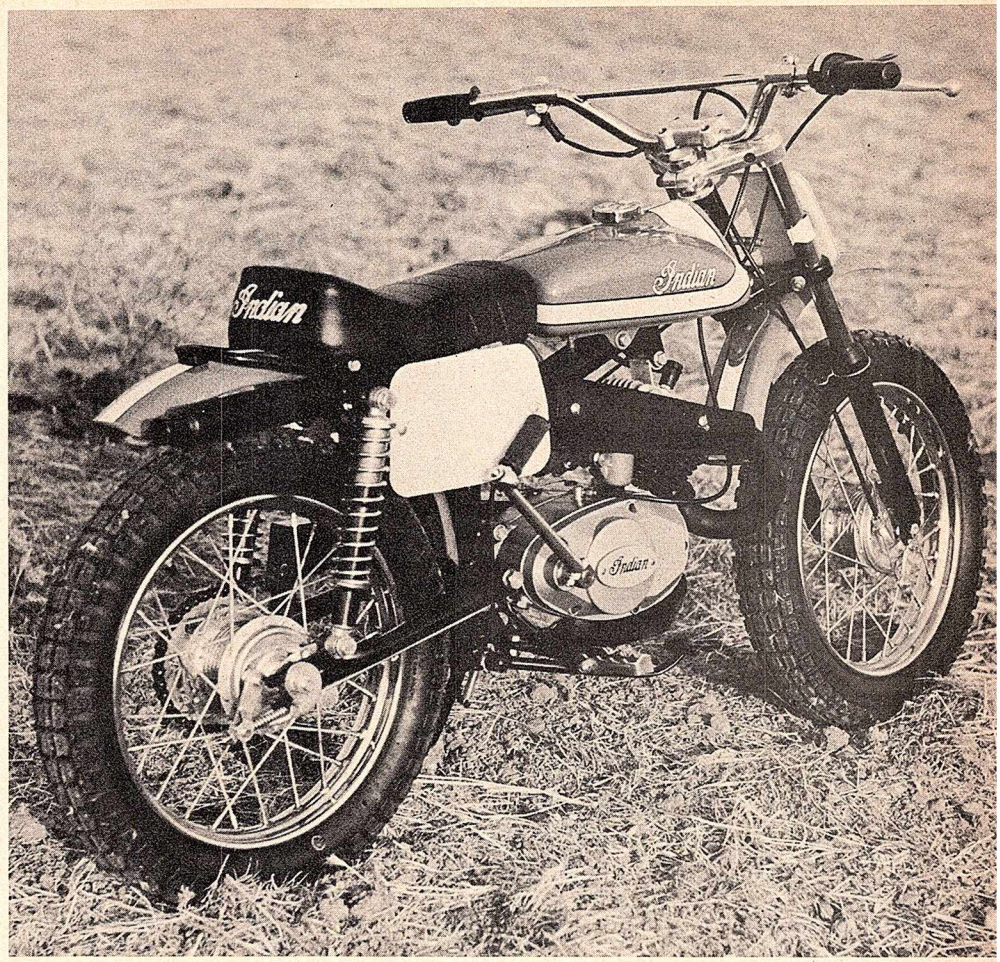
it easy to keep the machine operating at maximum efficiency. Gear changes are made with the lever on the right side of the engine. The shift pattern is: Down for low then up for the remaining three speeds. Lever travel is short and shifts can be made quickly and precisely. Neutral is located between first and second and it's easily found; a feature sure to appeal to the young rider. The control levers are also contoured to meet the requirements of small bodies.

Actually, all of the controls on the little Indian are easily operated by a youngster; the shift lever is short enough to make it unnecessary for a youngster to move his (or her) foot off the peg to make gear changes. Both control levers are closer to the bars than usual, so that small hands don't have to strain to reach them. Obviously, much thought has gone into designing the machine to make it easy for a child to ride.

Essentially a single backbone tube device, the frame is sturdy enough to stand the abuse of even the most "enthusiastic" rider. The







main backbone tube travels rearward from the steering head and then curves down sharply to terminate in a robust structure that provides the main mounting points for the engine. A secondary backbone tube parallels the main "spine" and terminates in the subframe loop that provides the mounting point for the saddle and rear fender. A pair of diagonal stringers connect this loop to the main backbone, thus, providing strengthening triangulation.

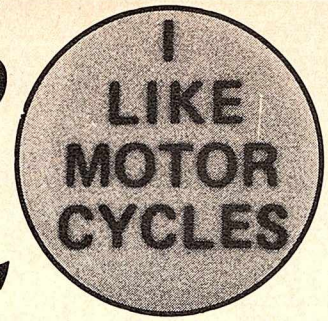
The swinging arm pivots on a massive thru-bolt and has an additional cross member to provide added strength, what we call an "H" pattern. Rear shocks provide moderate damping in both directions and have fixed springs. The Junior Cross' forks are also of the pogo configuration, but suspension is ample for such a tiny racer while handling is better than average.

Scaled in proportion, the 14-inch diameter wheels have full width hubs and internal expanding brakes that are more than adequate for stopping the little bike. 2¼-inch knobby tires are fitted front and rear, and the machine is out of the box ready to race.

There is only one objection to this bike, and that is the exhaust system hangs out a bit far and interferes with the rider's leg. It has a heat shield and also the number plate acts as an additional shield, but they do get in the way. A little re-engineering in this department and Indian would have an excellent little racer! ●

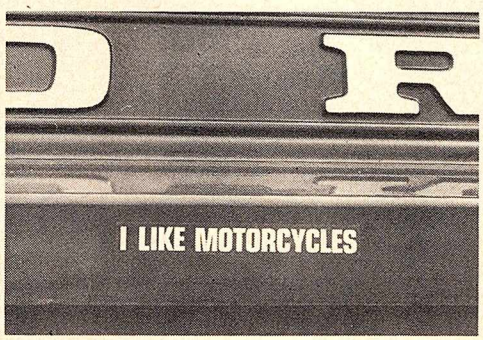
MAKE	INDIAN
MODEL	JC-54 S
PRICE AS TESTED	$319.00
ENGINE TYPE	SINGLE CYLINDER, 2-STROKE
BORE	38.8mm
STROKE	42mm
DISPLACEMENT	49.6cc
COMPRESSION RATIO	9:1
B.H.P. AT R.P.M.	3.9 AT 7,000
CARBURETOR	19mm DELL'ORTO
FUEL CAPACITY	1-GALLON
LUBRICATING SYSTEM	GAS/OIL MIST
CLUTCH TYPE	MULTI-DISC, WET
FINAL DRIVE	CHAIN
STARTING SYSTEM	KICK, FOLDING CRANK
TOP SPEED	N.A.
TIRE SIZE	FRONT: 2¼x14, REAR: 2¼x14
SUSPENSION	FRONT: TELESCOPIC FORK, REAR: SWING ARM
FRAME TYPE	SINGLE BACKBONE
WEIGHT	95 POUNDS
WHEELBASE	38.5 INCHES
GROUND CLEARANCE	8 INCHES
PEG HEIGHT	8.5 INCHES
SEAT HEIGHT	24 INCHES

NEW! FROM GROWCO



1005 I LIKE MOTORCYCLES. Here's the button that will put the finishing touch to that favorite hat or jacket. These large 1¼ inch pins are white with brilliant red type and sell for: **2 for $1.00; 5 for $2.00.**

1010 PAIN HURTS. The button that is guaranteed to bring a chuckle from anyone who sees it—especially those who have gone through an unpleasant experience such as failing to see that two foot ditch while roaring through the desert at 50 miles an hour. OUCH! PAIN HURTS!! These large 1¼ inch buttons are yellow with black print and make a great gag gift. **2 for $1.00, 5 for $2.00.**

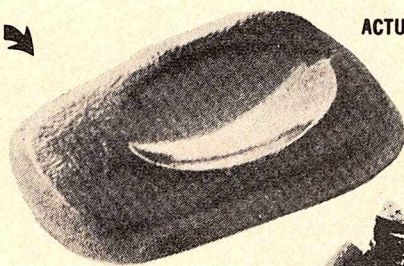


1009 I LIKE MOTORCYCLES. These stickers are just the thing to dress up the rear window and bumper of your car, truck, etc.

NOT DECALS! , decals are difficult to put on and they also chip and peel in a short period of time. Our stickers are self-adhesive clear vinyl with durable white type—just peel off the backing and apply to any clean surface. These stickers are sold in a set of two; One for mounting on a bumper or outside surface, and the other is printed in reverse for mounting on the inside of a car window. **$1.00 per set of two.**

1006 WORRY STONE. Trying to quit smoking? Tension getting you down? Bitten off all of your fingernails? Well here's a better way, try this ancient Indian method of relieving tension—just rub the stone with your thumb and be amazed at the calming effect it brings. Stones are hand carved from solid onyx. **$1.00 each.**

ACTUAL SIZE



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State ..... Zip .....

STOCK NO.	QUANTITY	TITLE OR DESCRIPTION	PRICE

TOTAL AMOUNT ENCLOSED $

GROWCO ENTERPRISES, P.O. BOX 1202, CANOGA PARK, CALIFORNIA 91304

EUROPE

Text continued from page 66

on the act with inferior copies and this same applies to the many accessories one sees on the market and in the many catalogs issued by distributors.

It would seem that sales of cross-braced motocross bars are up in the millions, and from some of the examples seen we figure that replacement sales must be enormous. Very few of these copy artists seem to know where the cross brace should be Welded (most examples seem to ignore the fact that cross-bracing should terminate at the tubes weakest point . . . the highest bend in the tubing—the brace thus forming a near enough straight line with the top run of the bar). Another universal fad is the use of alloy rims in motocross, slavishly copying the Joel Roberts of this game who can command inexhaustible supplies of spare wheels or rims. It might be said that if manufacturers made their product to stand up to the punishment, then such goodies as cross-bracing would not be required. But, to our knowledge, only the Greeves factory relies on an unbraced bar (albeit a high tensile tube effort), and this seems to stand the rough and tumble of motocross and they had as standard fitment until Dunlops ceased production a very light steel, high tensile rim on their Challengers and early Griffons.

Bruce Brown's "On Any Sunday," film is now on general release in Britain. When it first arrived the exhibitors thought that the film would have limited appeal and only a few trial showings were made. Such was the demand in other parts of the country that, as stated, it will be seen nationwide.

The reign of all conquering 250 and 350 Yamahas may be at an end and at the hands of the U.S. owned Aermacchi factory which showed the potential of the new two-stroke twins at the Italian GP. In the hands of Pasolini it beat the works entries of Rod Gould and Jarno Saarinen. The intention is that output will be aimed at the private racer and the design beautifully schemed for ease of owner/rider maintenance. As instance, the six-speed gearbox, from which the gear cluster can be removed without splitting the crankcases as the gearbox shell is a separate unit bolting

onto the rear of the crankcases. The two crank assemblies also can be separated with nothing more elaborate than a suitable wrench. Ceriani forks, two leading shoe Fontana brakes, Mikuni carbs, Girling shocks, Dunlop tires, and a six-gallon gas tank add to the picture of a well thought out and good looking racer.

The new 125cc 6-speed trials Montesa had its first outing in the Scottish Six Days, and now the 125 is in the dealer. Experienced riders are much impressed with the low down pulling power of the engine which can hardly be distinguished from its 250cc in size and weight. The give-away is the smaller Spanish Amal concentric carb. Much weight has been saved on the cycle parts and the ultra-low saddle height will appeal to the schoolboy and powder puff potential.

Honda are in with 2-strokes with their new 125cc motocross which they claim 21 bhp which all sounds very nice until we see that this high 21 is only attained when the works are screaming at 9,500. We are puzzled by the non-appearance of the Yamaha 250 and 360 motocross on the British market. The boys in England would welcome the MX versions.

Another new Spanish sensation is the Ossa 1000cc version of the 500cc Yankee-Ossa. This brute is intended for the Barcelona 24-hour race, which circuit seems an unwise choice for the debut of such a power-packed machine.

Ossa, not represented in motocross due to the efforts in upping production of the Mick Andrews Replica trials, now have a prototype motocrosser which World Champion DeCoster is helping to develop.

Gilera are entering the U.K. market with a neat low-priced 50cc tourer aimed at the 16 year-old who may not ride on public roads a bike over this capacity. And from Poland comes the 175cc W.S.K. (a new name), and an obvious competitor to the Dave Bickers imported road small capacity CZ's. These CZ's are amongst the lowest priced bikes on the British market, whereas the big CZ motocross is in the highest price bracket alongside the 400 Husqvarna and 400 Maico. Finally, a dismal thought to those users of the 500cc Westlake engine, no oversize pistons are available, but a good line in liners is available. Perhaps it was intended that Westlake cylinders never wore out!

MODERN CYCLE PHOTO CONTEST

The winning photograph in this month's Action Photo Contest was captured by Ed Armstrong of San Jose, California. This unknown rider seems to be "outrigging" it through the mud and slop at a motocross event held at Cycle Hills, California. For sending in the winning photo Ed Armstrong receives a check for $5.00 and a free one-year subscription to *Modern Cycle* Magazine.

Here's your chance to win a five-dollar bill plus a year's subscription to Modern Cycle **simply by sending in a good action photo involving any two-wheeled motor vehicle. For each photo we use, we will pay you $5.00 and a one-year subscription. Photos should be clear glossy black and white prints at least 4" x 5" in size. On a separate sheet of paper give us as much information as you can concerning the photo. Send your entries to: Action Photo Contest,** Modern Cycle **Magazine, 7950 Deering Avenue, Canoga Park, California 91304.**

All photos that are used in the magazine become the property of Modern Cycle **and cannot be returned. Contributors who wish unused photos to be returned must include a stamped, addressed envelope with the entry.**

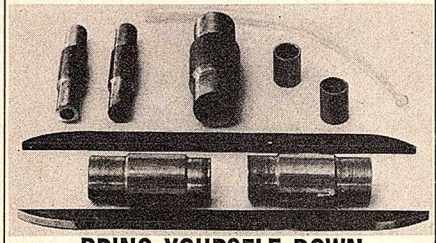
RIDING TOO HIGH?

K & G Will Bring You Down

Frame Modifications available for the following models:

Yamaha—AT-1 & CT-1 .....$65.00
DT-1, DT-2E, RT-1, RT-2E $39.95
HT-1 .....$49.95
Suzuki—TS-125 & TS-250 .....$49.95
TM-400 .....$75.00
Kawasaki—F4 & F7 .....$49.95
Hodaka—All Models $68.00

Other makes and models upon request. K&G will take your frame and lower its center of gravity for better handling. Swing arm is more horizontal and improves shock angle. Guaranteed workmanship.



BRING YOURSELF DOWN

Frame modifications kits available for the following models:

Yamaha—AT-1 & CT-1 .....$19.95
DT-1, DT-2E, RT-1, RT-2E $14.50
Hodaka—All Models $21.50

All prices plus shipping. California residents add 5% sales tax on kits. Send 50¢ for information to:

K & G Engineering
(originators of the lowered frame)
2353 San Fernando Road
Los Angeles, California 90065
(213) 222-8778

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ISLE OF MAN

(Text continued from page 15)

250 Production

1. J. Williams (Honda) ..... 85.32 mph
2. C. Williams (Yamaha) .... 84.06 mph
3. E. Roberts (Suzuki) ..... 83.14 mph

750 Sidecar

1. S. Schauzu/W. Kalauch (560 BMW) ..... 90.97 mph
2. A. Sansum/C. Emmins (Quaife Triumph) ..... 87.76 mph
3. J. Barker/A. MacFadzean (Devimead BSA) ..... 86.32 mph
4. J. Brandon/C. Holland (JCLS Honda) ..... 84.99 mph
5. R. Wegener/A. Heinrichs (520 BMW) ..... 84.48 mph
6. R. Hanks/J. Mann (BSA) ..... 84.36 mph

500 Sidecar

1. S. Schauzu/W. Kalauch (BMW) ..... 91.85 mph
2. H. Luthringshauser/J. Cusnik (BMW) ..... 91.70 mph
3. G. Boret/N. Boret (Renwick Konig) ..... 84.43 mph
4. W. Klenk/N. Scheerer (BMW) ..... 83.62 mph
5. B. Dungworth/R. Turrington (BMW) ..... 82.32 mph
6. R. Hanks/J. Mann (BSA) ..... 80.07 mph

350cc

1. G. Agostini (MV3)..... 102.03 mph
2. T. Rutter (Yamaha) ..... 98.13 mph
3. M. Grant (Padgett Yamaha) 97.57 mph
4. J. Findlay (Yamaha) ..... 97.41 mph
5. D. Chatterton (Chat-Yamaha) ..... 95.65 mph
6. S. Griffiths (Cowles Yamaha) ..... 94.16 mph

250cc

1. P. W. Read (Yamaha) .... 99.68 mph
2. R. A. Gould (Yamaha) .... 98.09 mph
3. J. Williams (Yamaha) .... 97.09 mph
4. C. Williams (Yamaha) .... 95.98 mph
5. W. Pfirtir (Yamaha) N.... 95.93 mph
6. W. Henderson (Yamaha) .. 95.26 mph

Formula 750

1. R. Pickrell (750 Triumph) 104.23 mph
2. A. Jeffries (750 Triumph).. 103.46 mph
3. J. Findlay (750 Suzuki) .. 98.33 mph
4. D. Nixon (750 Triumph) .. 96.12 mph
5. C. Williams (350 Yamaha) 95.99 mph
6. R. Steele (750 Norton) .. 95.31 mph

125cc

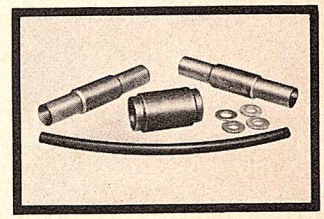
1. C. Mortimer (Yamaha) ... 87.49 mph
2. C. Williams (Yamaha) .... 80.49 mph
3. W. Rae (Maico) ..... 79.29 mph
4. L. Porter (Honda) ..... 78.63 mph
5. R. Hackett (Honda) ..... 76.55 mph
6. R. Watts (Honda) ..... 76.40 mph

500cc

1. G. Agostini (MV Agusta) .. 104.02 mph
2. A. Pagani (MV Agusta) .. 98.13 mph
3. M. Grant (Kawasaki) ..... 97.03 mph
4. K. Cowley (Seeley) ..... 96.10 mph
5. V. Chatterton (351 Yamaha) 95.90 mph
6. C. Williams (365 Yamaha) 94.52 mph

ANOTHER QUALITY PRODUCT FROM

WEBCO



YAMAHA DT-1 LOWERING KIT

A simple, easy way to modify the frame of DT-1 model to make it the same as the new DT-2 M/X. Lowers the engine 1¾" and moves it back ⅞". The result is improved handling through a lower C.G. along with proper swing arm angle, plus improved relationship of seat to pegs. Includes full instructions for trouble-free installation.

#2248 ..... $14.95

Webco Catalog, 92 pages, still only $1.00

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MINI BOGE

MINI BOGE

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FEATURING:

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- Beautiful chrome plating
- 55 lb. springs
- ⅜" hard chrome rod
- 10" length
- 2" travel
- ⅜" bolt diameter

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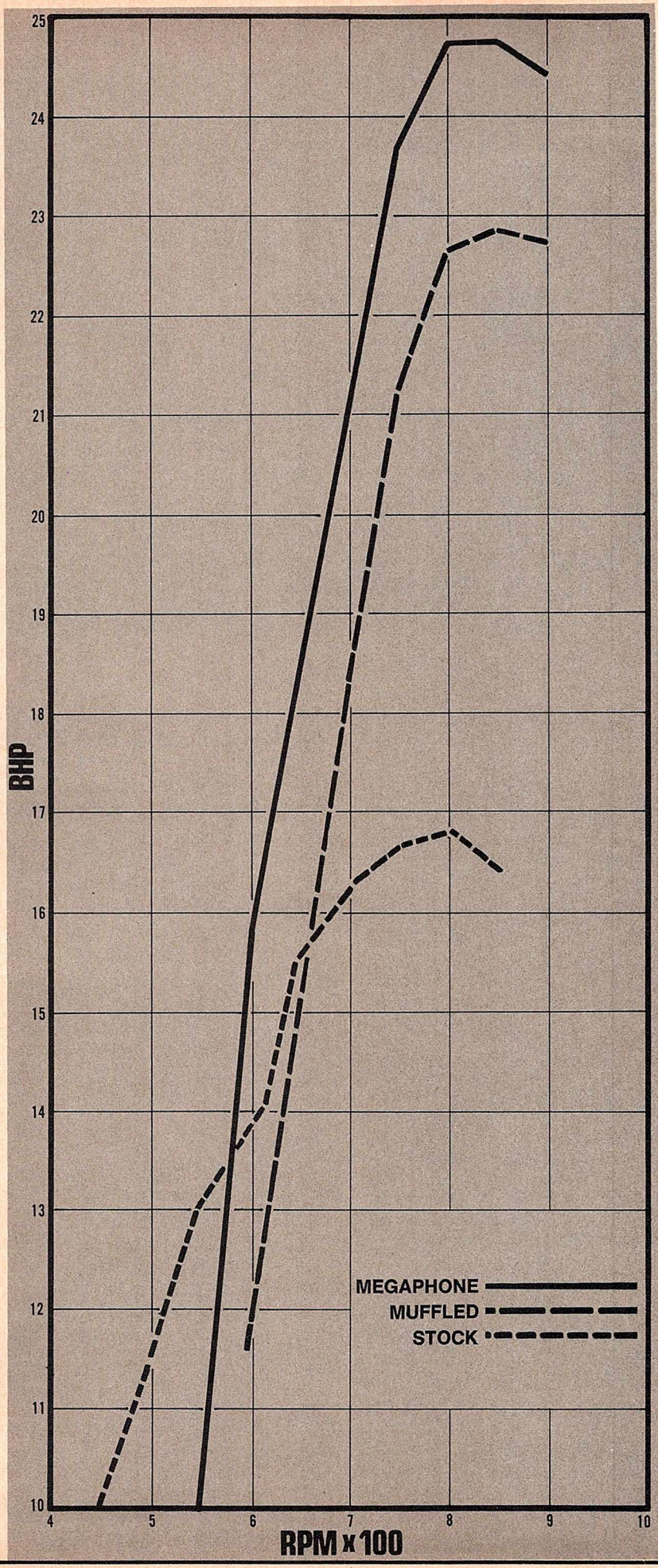
HONDA XL-250MX

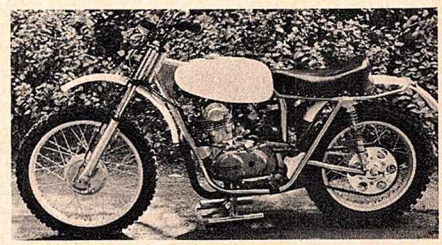


Text continued from page 62

running was by watching the meter.

What we have is a very strong engine that is going to live a long time. Special valve springs will be available that should add another 500 usable rpm to the curve, although the standard progressive springs aren't all that bad. When it comes to bolting an engine together and getting a 40% increase in horsepower, it seems Yoshimura has shown us the way to go.

In motocross trim the XL is a superb bike to ride. Once we got the carburetor mid-range sorted out, throttle response was both predictable and strong. The 4.50 Goodyear MX tire is a great stone thrower as the machine accelerates in straight lines. Its long wheelbase and forward mounted engine makes the bike a slow lazy handler with very little weight transfer effect when either on or off the throttle. Our XL does not pull wheelies, but the suspension allows it to launch and land with the rear wheel slightly down.



With a gallon of gasoline in the tank our project bike tipped the balanced beam scales at 241 pounds. Figuring 7 pounds for the gallon of gas, we came up with 234, our target was 235. Considering both wheels and the complete front end are still box stock, the machine could be further trimmed right down to the 200-pound mark. I say this because the entire rear wheel assembly, including tire, weighs 38 pounds. About 20 pounds more than it should.

We will continue on with this machine, and when we find something startling you'll know about it. Maybe the next time we write about it, it'll be a full enduro machine.

You can write to the following companies to obtain information on a few of our XL's pieces:

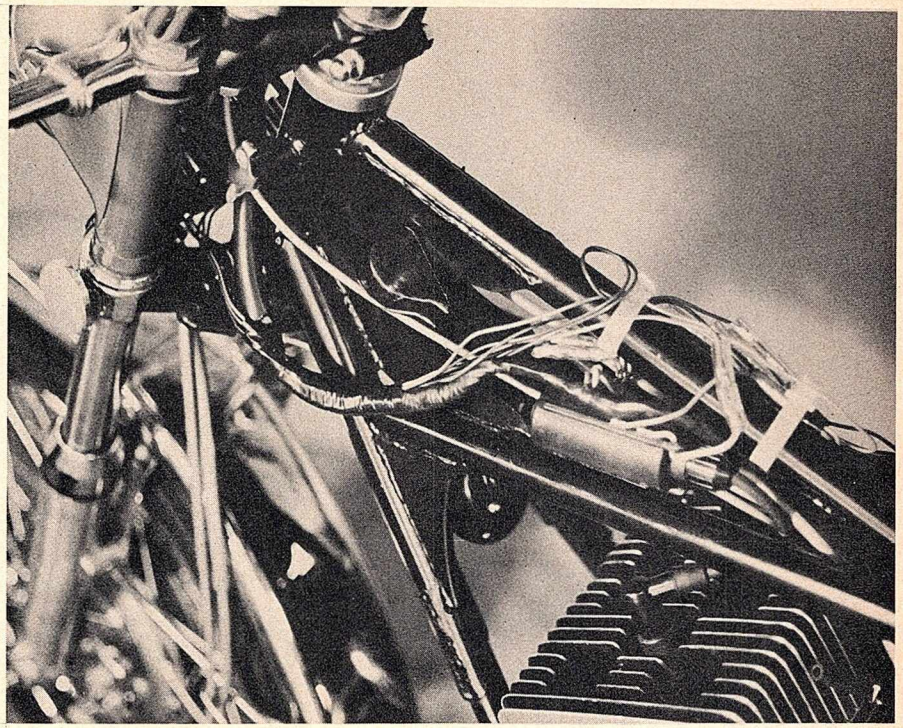
Yoshimura Racing (Engine)
2190 Shasta Way
Simi Valley, Calif. 93065

Torque Engineering (Exhaust)
19755 Bahama Street
Northridge, Calif. 91324

Arnaco Corporation (Shocks)
20729 Dearborn
Chatsworth, Calif. 91304

Trackmaster Racing Frames (Chassis)
18548 Parthenia Street
Northridge, Calif. 91324

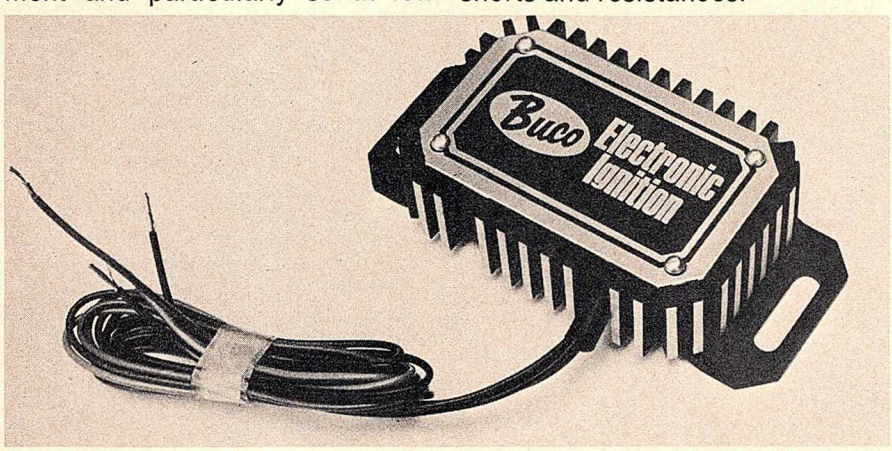
Buco Electronic Ignition wiring blends so well with original harness as to be undetectable. Polyethylene tubing over connectors further adds to 'stock' appearance.



Installed, the Buco Electronic Ignition is almost hidden behind the headlight. Even garden variety hose clamps used for mounting are unobstrusive.

PRODUCT EVALUATION: THE BUCO

We're fast approaching the time when ignition problems may cease to plague two-stroke motorcycles. More and more manufacturers are opting the electronic ignition, particularly on their performance models. In all of its variations electronic ignition provides a high-voltage, consistent current to the primary side of the ignition coil—as strong at idle as it is at peak revs. A two-stroke combustion chamber is a damp environment and particularly so at low engine speeds where gas velocities are lowest. Few conventional ignition systems can provide sufficient fire to cut through the fuel fog without the help of warmish spark plugs. Unhappily, this is a compromise and not a solution; "hot" plugs, as they are generally called, won't stand up to sustained high-speed, high-temperature operation for very long. They're prone to eroding of the electrode and developing heat-induced shorts and resistances.



But as much promise as electronic ignition holds for tomorrow's buyer, it's of little use or consolation to the chap who presently owns a late model white-knuckles two-wheeler that's a pig to start on cold mornings and impossible to keep running under 4,000 rpm. What is of great benefit to the rider of an ignition-trouble-plagued but otherwise satisfactory motorcycle are the accessory electronic ignitions that are appearing in increasing numbers.

Several of these units have come our way, and each of them has performed as promised. A couple of the units have been accompanied by a great deal of technical information, schematics, and all manner of things that are of purely academic interest. At the extreme, one unit, the Buco Electronic Ignition evaluated here, arrived in a handsome red-white-and-blue container that told simply what the unit would do and how it was to be installed. No more, no less. In addition to of-

fering a near goof-proof installation, the Buco unit was easily the best looking of the lot and more ideally scaled to a motorcycle's size. Other units, such as the Sydmur Compac and the T.E.S.T. Electronic Ignition, have been mounted on automobiles and are working with complete satisfaction. They provide instant starting under all conditions, and an improvement in all-around performance is noticeable.

The test bed selected for the Bucco unit is a past feature road test bike, the Yamaha R5C meets the criteria for a test of this sort; it is most definitely a performance model, and it is equipped with a conventional ignition system. The R5C must be kept in spot-on tune and the engine speed range must be maintained in the upper half of the scale if the fire is to remain lit. Ridden mindlessly, as occasionally happens in light traffic, the flame will self extinguish, and while this is not necessarily the motorcycle's fault, it is an anoying trait for a motorcycle that's intended for all-around use. Yamaha acknowledged the problem and assured us that it's been remedied with the 1973 models. How nice. And wouldn't it also be nice, we reasoned, if the owner of a '72 model, and any owners of any of the legion of other ignition-troubled two-strokes, could be enjoying their purchases to the same extent, right now?

Well, the Buco Electronic Ignition appears to solve the problem. The qualification is intentional; time, or lack of it, prevents a long-term evaluation. We would like to be able to say that, "After 15,000 miles of commuting and touring the ignition unit has done thus-and-so." What we can tell you, however, is that installation of the unit is a piece of cake, one- and two-kick cold starts are routine, throttle response is crisper, and the low-speed running characteristics are not to be believed! The Buco Electronic Ignition-equipped R5C is now content to loaf along quietly, steadily at 2,000 to 3,000 rpm, and then willingly take all the throttle it can be given without the slightest hesitation. Stop-and-go traffic is no longer a hassle; the RC5 will creep along under steady throttle, requiring no howl-producting handfuls to keep it clean. A totally civilized plot.

The Buco Electronic Ignition, and other accessory units, are not the pointless units found on some production motorcycles, such as the Mitsubishi CDI on the Kawasaki multis, and the Femsotronic and Motoplat ignitions used by European manufacturers such as Bultaco and Sachs. In place of a mechanical breaker, or points, these units employ a signal sending unit timed to the engine operating cycle much as points are. The signal serves as a trigger to cause a capacitor to discharge a voltage to the primary side of the ignition coil, but that's a whole 'nother story which we hope to bring you soon.

The Buco Electronic Ignition is tied into the existing ignition circuitry, utilizing the original points, condensers and coils. Timing and point clearance remain the same. The Buco Electronic Ignition is offered in two models—one for single point ignition, the other for dual points. The Yamaha's ignition system dictated use of the latter.

The installation began with removal of the gas tank, seat, and left side engine covers. Next, a suitable mounting point was selected. Because the electronic ignition produces some heat it is housed in a generously finned aluminum heat sink. To further help the matter of heat dissipation it was determined the unit should be mounted in the air stream. (This is strongly emphasized on some electronic ignition models.) The area beneath the headlight proved ideal; the use of hose clamps obviated the drilling of holes, the unit is in the air stream, and its handsome finish can be appreciated.

The super-clear installation instructions and schematic were next compared to the circuit diagram in the R5C rider's manual, color coding was correlated and the task begun. Wire routing was carefully planned to correspond to the routing of the main loom, so that when the R5C electrics are worked on in the future some unsuspecting mechanic (who receives financial compensation for his time), can perform required tasks routinely.

Connections were made with automotive bayonet connectors. These devices require a good deal of muscle to separate them and thus offer excellent insurance against accidental uncoupling. To further guarantee integrity of the system the connectors were both crimped and soldered. Finally, all the connectors were housed in clear polyethylene tubing and the wiring was neatly taped to the main loom. The complete job consumed a little less than two hours.

The results are most rewarding; the excellent finish of the unit, along with a carefully planned and executed installation, eliminate any chance of the Buco Electronic Ignition looking like a tacked-on gimcrack. And the change in operating characteristics of the engine is something to be experienced. Generally speaking, "fixes" this good are expensive. And electronic ignition is commonly regarded as a costly luxury. But such is no longer the case; at $29.95 the Buco Electronic Ignition costs little more than a major tune or a new tire. The single unit retails for $26.95. The other units are comparably priced and, as we've said, equally good. For more information on the Buco Electronic Ignition write, Buco Products, 7652 Burnet Avenue, Van Nuys, California 91405. •

ELECTRONIC IGNITION

MODERN CYCLE EXAMINES AN INEXPENSIVE CURE FOR IGNITION AGONY

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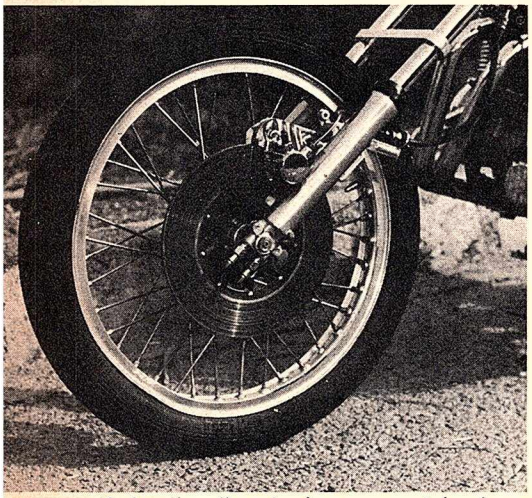
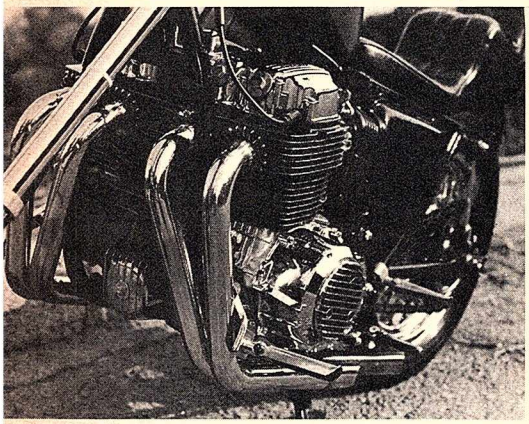


Hydraulic disc brake was retained on front. 21-inch rim is aluminum alloy.



Straight pipes exit from the chromed engine. Fins were painted black with the edges buffed.

500x16 wheel is completely chromed. Shortened strut and sissy bar are homemade.

Raked frame, 15-inch front end, and 21-inch wheel add to the long, lean look.

Many custom motorcycles sit in a garage until Wednesday and Friday nights when it's fired up for a little profile cruising down the main drags in town. This, however, is definitely not the case with Harvey McDowell's '70 Honda 750/Four. It is his sole means of transportation. Wherever Harvey goes, he goes on his custom bike.

He bought the bike from a friend who lived near his home in New Jersey. The price was right for Harvey because the engine was blown up. That was quickly repaired and the bike began its role as wheels to and from work.

Customizing had to go at a slow pace. Each night, a little piece of work was started and completed so that the bike would be ready to ride the next day. Bit by bit, the custom began to form.

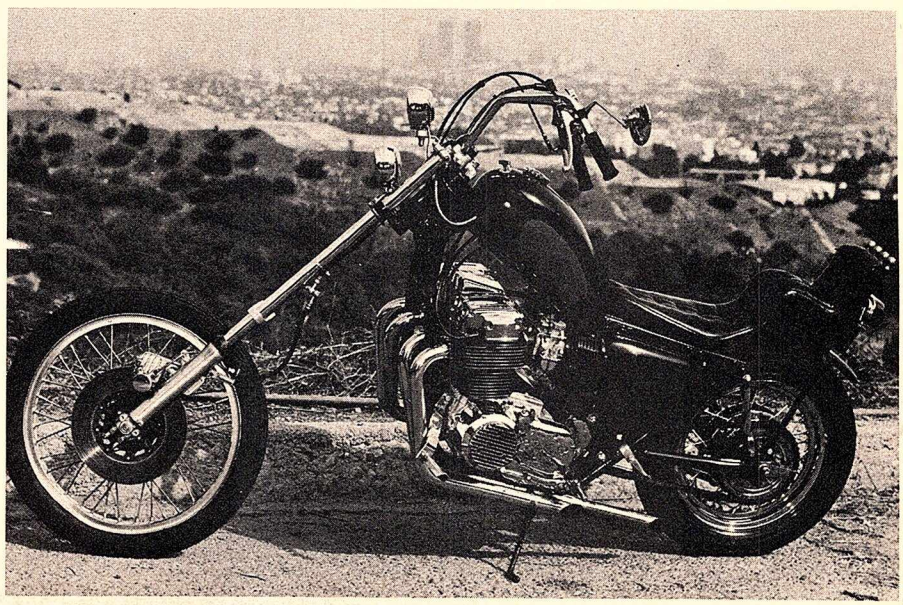
In the middle of this, McDowell decided to move to the home of custom bikes, Southern California. Naturally, his means of transportation was the Honda. At the time of the move, the only things that lacked the custom treatment were the seat, 500 x 16 rear wheel, and most of the chrome. He had already raked the frame ½-inch and mounted the 15-over fork legs on the standard front end. To compliment the long forks, a 21-inch front wheel was added.

Struts, shortened and re-chromed, were put in place of the rear shocks to bring the back end down closer to the wheel. After the move west, a completely chromed rear wheel was made up and shod with a fat Harley-type 500 x 16.

That big standard gas tank was replaced with a smaller custom unit. It was modified slightly so that the ignition switch could be mounted in it just ahead of the gas cap. Two overlapping orange panels in the side of the tank are the only color in the black and chrome machine. Because a custom paint shop would have taken a couple of weeks to paint it for him, he did it himself in the evenings with aerosol spray cans. The engine heads and cylinders were painted black and then the fin edges were buffed out.

Chroming, most of it on the engine cases, had to be sent out. So for a week, the bike sat and McDowell walked. But since that time, the bike has been on the road continuously with small bits of customizing going on in the evenings.

Six days before these photographs were taken the front end of the bike was destroyed in an accident. By that evening, the Honda was running and back on the road again. Five evenings later, the restoration was complete. When it's your sole means of transportation you learn to be fast! ●



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TRIALS TRAIL

(Text continued from page 22)

Hunt, now manager of Hercules Distributing Company, crashed; and Stu Peters, president of the CMC, his Jawa broke.

The 1965 ISDT was held on the Isle of Man, no private entry finished, but Bud was the last American still going at the end of the third day. That was the toughest Six Days with 39 finishers. There were 21 Yanks that started this one including John Penton and Leroy Winters.

In 1966 we went to Sweden with another U.S. Vase Team. Bud and I walked away with Gold medals, his in the 250 class, mine in the 125 class. Leroy Winters got lost, Jack Krizman crashed, and Malcolm Smith and Charles Hockie both picked up Silvers on their first International.

Poland was the site for the 1967 event and both Bud and Malcolm Smith won Golds. John Penton, Dave Mungenast, and Doug Wilford were also there but none did better than Silvers. Italy was another tough one and not one American won a Gold. Tom Penton was the best Yank closely followed by Al Rogers, another California desert rider; both picked up Silver medals for their troubles.

Bud retired after Poland and I came back for the West German event having last ridden in Sweden. There were nearly 30 Americans that started but not so many finishers. After a broken spindle I ended up with a Bronze but still placed best American on special test scores in the 125 class. Ron Bohn, Malcolm Smith, Billy Uhl, Tom Penton, and Jack Penton won Golds that year. There were a host of Silvers picked up by many other Americans in that tough event.

In 1970 we went to Spain with a first-ever Trophy Team and two Vase Teams. Overall we didn't fare too well, but Malcolm Smith picked up his third Gold and Ron Bohn his second. Two of the Penton kids also took home Golds. At this point I have lost count, but I believe a few guys like Paholke and Doug Wilford also ran well enough to win the coveted medal. 1971 was again held on the Isle of Man, and, as Sammy Miller said, it was too easy. "A bloody Gold rush." But up to this point Malcolm, Bud, and myself (with our nine Gold medals), had far more than the rest of the U.S. combined, and we are all three a bunch of California desert rats.—Dave

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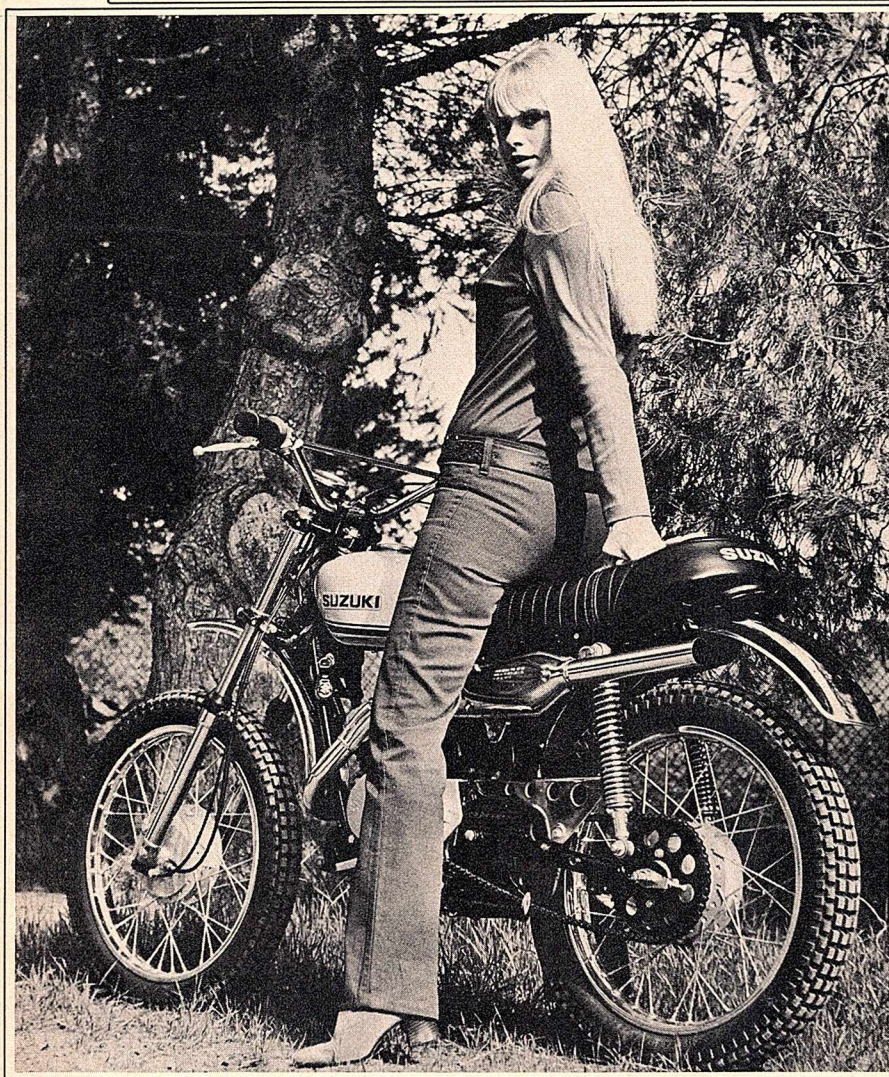

This month's winner in the Miss Modern Cycle Contest is Nancy Burba, need we say more?! This 22 year-old blonde is a resident of beautiful downtown Burbank, California. To add to this, that's her very own Suzuki 90! The winning entry was taken by Leon Beauchemin also of Burbank. For cap turing this feminine female in a photograph, Leon receives a check for $5.00 and a free one-year subscription to *Modern Cycle* Magazine.

All photos that are used in the magazine become the property of Modern Cycle **and cannot be returned. Contributors who wish unused photos to be returned must include a stamped, addressed envelope with the entry.**

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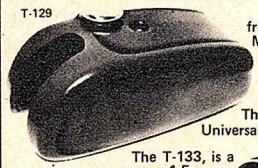

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A BLAST FROM THE PUBLISHER

Text continued from page 4

specifically the motorcycle accessory industry, has found a way to make a quick profit by selling these things, and in the process is cutting their own throats. Recently, the MIC has made the proper move in condemning noise makers. They did it to save their own necks, and don't you think they didn't!

P.S. The guy pictured on page 53 is Gordon Karrel, our publisher; his camera is a Nikon model F with a 300mm telephoto lens.

NOISE CONTROL ON MOTOCROSS

Russ Coe, American Motorcycle Association coordinator of professional racing, has announced that the AMA will require competitors entered in the Inter-AMA and Trans-AMA motocross series to race with mufflers meeting established AMA standards.

The decision came after a meeting at AMA headquarters in Worthington, Ohio, June 13, which included Coe, director of competition Don Woods, national motocross referee John Lancione, and associate director Ed Youngblood.

Youngblood, AMA's delegate to the technical committee of the FIM, was consulted in regard to European reaction. He stated, "Several European nations require mufflers in national competition just as we do, and at this time several delegates to the technical committee are attempting to get such regulations written into the international code of the FIM. After our efforts in the area of noise control, it would be a step backward to let these events run unmuffled at this time."

Competition director Woods adds, "We will have to draft supplementary regulations to be approved by the FIM since these races run under International sanction, but we expect no objections since many of the European riders that will be entered are accustomed to muffled exhaust systems already. However, for those that may not be properly prepared, we will see that facilities for installing silencers are provided at each event."

Amen—Gordon.

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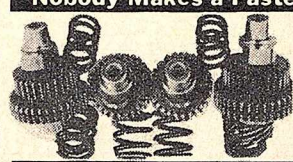

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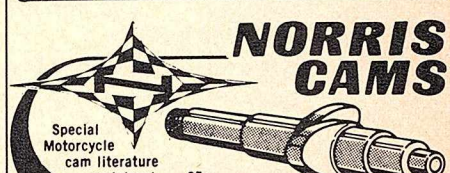

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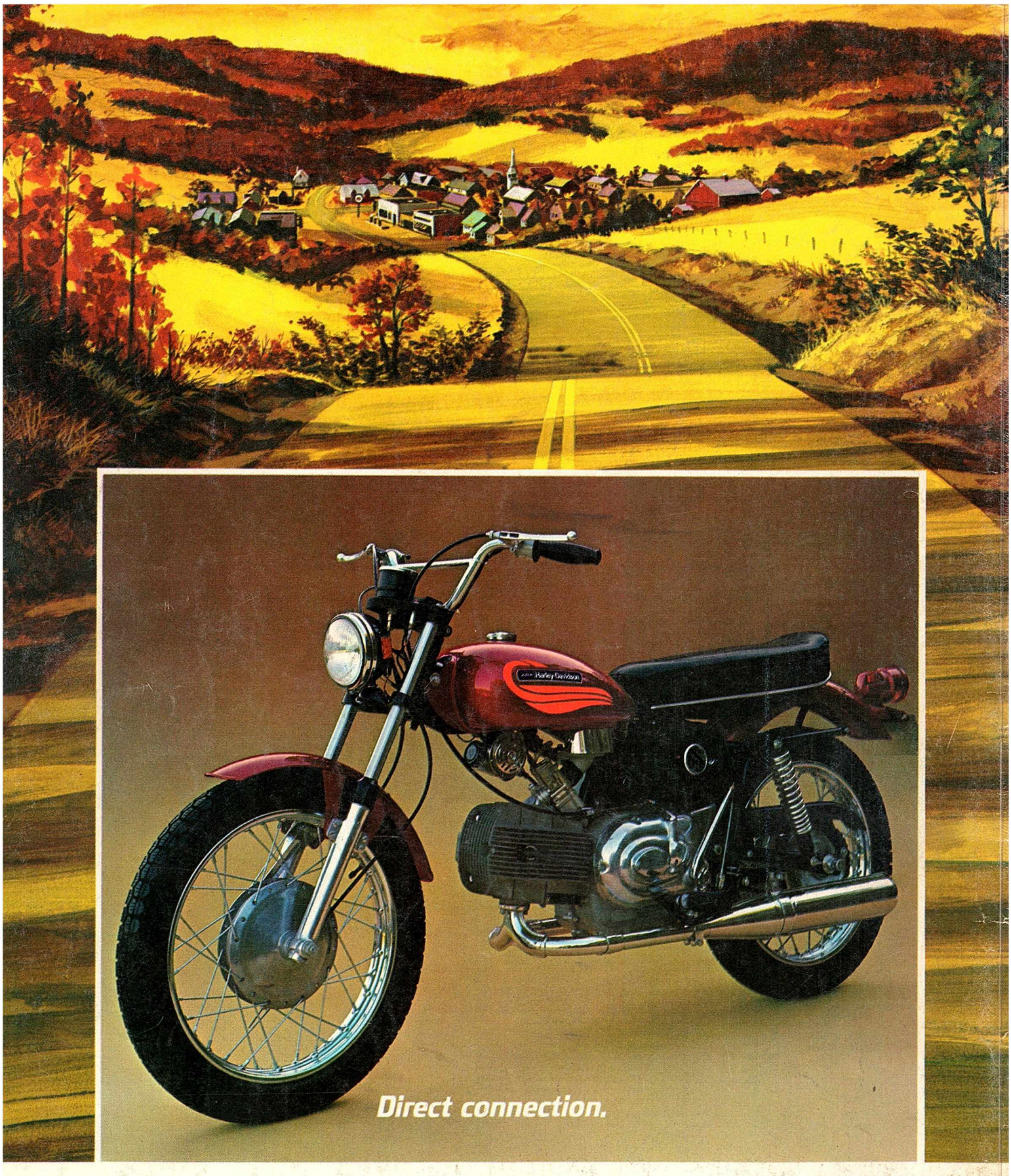

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